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OBSTETRICS AND GYNECOLOGY IN GENERAL PRACTICE *

CARL HENRY DAVIS, M.D.
MILWAUKEE

The first meeting of the American Medical Association which was held in Baltimore, May 2, 1848, occurred at a time when inhalation anesthesia constituted the great advance in medical practice. The Committee on Obstetrics reported that "the anesthetic agents ether and chloroform have now been used in perhaps 2,000 cases of midwifery, and so far as the committee have been able to learn without a single fatal, and few, if any, untoward results."

The development of anesthesia and analgesia in obstetric practice was slow at first because of the opposition of the clergy and, to a lesser degree, of the medical profession. Simpson was knighted by Queen Victoria after she had experienced painless childbirth, but had he lived in the sixteenth century it is probable that he would have fared as badly as the witches. Today the relief of pain is expected by the average woman and most physicians consider it an important procedure in the conduct of labor. However, the passing years have brought many changes, and chloroform à la reine has been replaced in America by ether, hypodermic medication and gas-oxygen analgesia.

EARLY HISTORY OF THE SECTION

A section on "Practical Medicine and Obstetrics" was organized in 1860. Dr. N. S. Davis of Chicago called the meeting to order and Dr. Nourse of Maine was elected the first chairman. Fifty physicians enrolled their names as members of the section. At the afternoon session Dr. Moulton of New York commented on a case of retroversion of the uterus during pregnancy, and Dr. McGuigan discussed a paper he was preparing on puerperal tetanus. This ended the obstetric program for that year. Tetanus during the puerperium is today a medical curiosity, but should a case develop in a maternity ward the most rigid methods are required in eliminating risk to other patients. The program this year reveals that retroversion of the uterus during pregnancy is still a subject for discussion.

In 1867 the name of the section was changed to "Practice of Medicine and Obstetrics" and so continued until 1873, when medicine was combined with the section on Materia Medica and Physiology, and a section on "Obstetrics and Diseases of Women and Children" was organized. Seven years later "Diseases of Children" was made a separate section, and our section became "Obstetrics and Diseases of Women." The following papers were read at the 1880 session: (1) clinical contribution to the subject of the removal of the uterus in whole or in part for the extirpation of tumors connected with that organ; (2) on the management of the third stage of abortion, with retention of membranes; (3) a new instrument for dilating the cervix uteri, and restoring the inverted uterus; (4) on the treatment of fibroids of the uterus by means of dry earth, and (5) stillbirth—resuscitation after two hours and five minutes.

From 1880 to 1911 the name of the section was "Obstetrics and Diseases of Women." In 1911 a resolution changing the name to the Section on Obstetrics, Gynecology and Abdominal Surgery was presented to the House of Delegates but was received too late for action. In 1912 the House of Delegates approved the resolution and the name was changed accordingly.

MATERNAL MORTALITY IN THE UNITED STATES

Six years before the founding of this association, Oliver Wendell Holmes wrote his essay on Puerperal Sepsis. Semmelweis reported his first detailed clinical observations in 1847. It was many years before the importance of their teaching was fully appreciated, and, notwithstanding the present knowledge regarding the causes of infection and of aseptic methods, puerperal sepsis still remains the greatest single cause of the high maternal mortality in this country. For many years it was believed that ignorant midwives were responsible for most of these deaths and the substitution of medical care in childbed was urged. Gradually this has been accomplished and in at least three states, New Hampshire, Vermont and Oregon, there were no midwives reporting births in 1925. Nevertheless, New Hampshire had a maternal death rate of 7.1, Vermont 6.8, and Oregon 7.2 per thousand live births. In Wyoming 99.2 per cent of all births were reported by physicians and there was a mortality rate of 9.0 per thousand live births. New Jersey, where 21.7 per cent of all births were reported by supervised midwives, had a maternal mortality of 6.4 per thousand live births, which was the average for the entire birth registration area that year.

The percentage of obstetric cases under the care of physicians has increased greatly during the last half century without any apparent lowering of the maternal risk except in the private practices of well trained obstetricians, and in teaching institutions. Since deaths from other preventable causes have been materially reduced, we must now face the challenge of a maternal death rate which has varied little since this association was founded. It is a sad commentary on our people and on the medical profession in particular that the most prosperous country in the world should have so

* Chairman's address, read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 11, 1929.

many deaths from puerperal sepsis and other more or less preventable causes. While the problem is complex and no immediate solution is possible, progress is certain if we consider the woman patient with her usual medical attendant, the general practitioner.

Specialists in obstetrics and gynecology were almost unknown eighty years ago. While today there may be one or more in cities of 50,000 or larger, the care of women and children still remains a very important problem of the general practitioner. More than 80 per cent of the births in Milwaukee are reported by physicians who do family practice, and this is probably true for other cities of a half million people.

TEACHING OF OBSTETRICS

It was the recognition of the fact that obstetrics and the care of children were the cornerstone in the development of a general practice that led to the original section on "Practical Medicine and Obstetrics." Specialists are necessary in the management of complicated problems, but the family physicians should be trained to meet safely the commoner obstetric and gynecologic conditions.

The teaching of obstetrics and gynecology was a development of the nineteenth century and it has not kept pace with that of medicine and surgery. Obstetricians and gynecologists are only partially responsible for this, since it has been difficult to secure an adequate clinical material. Thomas C. James was appointed professor of obstetrics and the diseases of women and children at the University of Pennsylvania in 1810; yet his courses were not required for graduation until 1813. Harvard University did not have a department of obstetrics until 1815, when Walter Channing was appointed lecturer on obstetrics and medical jurisprudence. He was instrumental in America for the early popularization of anesthesia during labor and in 1848 wrote a monograph on this subject. The inadequate teaching of obstetrics was brought to the attention of the Association in 1911 by Dr. Williams, and in 1928 Palmer Findley again stressed this subject in his presidential address before the American Association of Obstetricians and Gynecologists.

Obstetrics has always been the most time consuming and the poorest paid work a physician undertakes. Comparatively few physicians have received sufficient training to qualify them as specialists in this branch of medical practice. Hospital facilities for obstetric patients are very inadequate in most parts of America. Comparatively few interns at the end of their hospital service have had enough training in obstetrics to meet safely even the simpler complications of pregnancy and labor. When one realizes that physicians in general practice must undertake all types of labor with little training and under the most unfavorable conditions, it is apparent that maternal mortality cannot be reduced in a few months through the efforts of a governmental bureau or by individual obstetricians. The latter have demonstrated that large numbers of women may be carried through pregnancy, labor and the puerperium with very little risk, whether in the home or in the hospital. Teachers of obstetrics with inadequate facilities and limited hours of instruction have thus far been unable to train undergraduate medical students adequately for the problems they must face so early in general practice.

Dean Emerson of the University of Indiana has well said: "It is the business of medical schools to prepare students for the first two years of the practice of medicine." Palmer Findley reminds us that while a knowledge of surgical diagnosis and the ability to do minor surgery and administer first aid in major surgical lesions is all that is needed for the young practitioner, there is in obstetrics no problem, however grave, which he may not be required to meet at any time. He says:

> Placenta praevia, eclampsia, ectopic pregnancy, ruptured uterus, contracted pelves; these and other obstetric problems may present themselves in the earliest years of practice and under conditions that admit of no opportunity to shift responsibilities. More than this it will be as incumbent upon the young practitioner, as upon the older and more experienced, to recognize the danger signals and to exercise the needed skill to avoid disaster.

TRAINING OF THE GENERAL PRACTITIONER

The gynecologic problems of the general practitioner are less serious than the obstetric and may be compared to the general surgical problems in that they are usually those of diagnosis and minor therapy. While a good knowledge of pelvic anatomy, physiology and pathology is essential, little more than diagnosis and medical therapy need be taught in an undergraduate gynecologic clinic. Major operative procedures are necessary in demonstrating pathologic conditions but are otherwise of little value for the medical student who theoretically is being prepared for general practice.

The general practitioner should be competent at first to make a careful pelvic examination and with an increasing experience to diagnose most gynecologic conditions. He should know that the most common complaint of women, leukorrhea, may be due to a variety of abnormal conditions and endeavor to make an accurate diagnosis rather than be content to advise tampons and douches. Early diagnosis of uterine or cervical cancer is dependent on more careful pelvic examinations by the general practitioner. An inspection of the cervix is just as important as the bimanual examination. Through his reading and visits to clinics he should keep in touch with refinements in the simpler diagnostic methods and medical treatment. He should become adept in the electrocautery treatment of small lacerations, ectropion and chronic endocervicitis. He should be able to distinguish vaginitis caused by *Trichomonas vaginalis* from acute gonorrhea and he should be familiar with the medical treatment of each condition. Unlike obstetrics, gynecologic conditions present few emergencies to the general practitioner, and consultation with his library or a specialist is always possible.

Pregnancy, with its complications, is the second greatest cause of death for all women from 15 to 45 years of age. Interested physicians recognize a number of conditions that contribute to this mortality. It starts with inadequate training in obstetrics and ends with a number of unfortunate tendencies which have developed in practice as a by-product of anesthesia, antiseptics, solution of pituitary, and hospital operating rooms. Before anesthetics were available, obstetric operations were rarely attempted and every woman was given ample time to deliver her baby spontaneously. With the introduction of ether and chloroform, operative deliveries became less objectionable and the number increased. Before the antiseptic and aseptic periods of surgery, cesarean section was fatal in such a high percentage of cases that it was limited to absolute indications and every effort was made to avoid it. In the early antiseptic period 150 Porro operations showed a mortality of 54 per cent, while a little later, when

Saenger returned to the conservative operation, there was a maternal mortality of 40 per cent in forty operations (Engelmann). Today we learn that the mortality from cesarean sections in many parts of the United States still varies between 5 and 10 per cent. This may be contrasted with the private cases of a goodly number of obstetricians who have a mortality not exceeding 1 per cent.

Solution of pituitary is one of the most powerful and useful drugs used in medical practice. However, large doses during labor have resulted in the death of many babies and a smaller number of women. The harm that its unwarranted administration has caused to pelvic organs cannot be estimated.

A hospital operating room should be a place of safety. It is there that one may find the varied equipment which may be needed in an emergency. But because of the ease and the apparent safety of the operating room, many ill advised obstetric operations have been performed. There are a considerable number who believe that too many women have cesarean sections and thereby lose their lives, when other methods of delivery might have been employed safely had the surgeon been more familiar with obstetric procedures.

The easy labors of primitive women are not entirely fictitious, as is shown by many authentic observations, but it was early recognized that an Indian woman pregnant by a white man usually had dystocia. It is also probable that the general mixture of races in America has led to a considerable degree of disproportion between the fetal head and the birth canal with a resulting increase in the need for operative deliveries. Furthermore, our present civilization with its artificial refinements and customs has made women less able nervously and physically to stand the strain of a hard, prolonged labor. These and a variety of local conditions make the medical care of women in America more difficult than it is in many other countries. Nevertheless, much may be accomplished through more adequate medical service and better community cooperation.

SUMMARY

The following conditions are believed essential in the effort to obtain better medical care for women patients:

1. Governmental activities should be directed toward a careful survey of the causes of maternal and infant deaths in the United States and an investigation of methods that may be adaptable to various local conditions.

2. Medical students who go into general practice after graduation require a more adequate clinical training in obstetrics. Greater freedom in the selection of courses during the senior year may be necessary, unless the entire curriculum is planned on a basis of requirements for general practice.

3. More institutions are needed in which physicians who wish to specialize in obstetrics and gynecology may obtain the necessary training.

4. There is a great need for graduate nurses who may qualify as midwives to work in conjunction with the medical profession in the care of a large group of women who are unable to pay for adequate obstetric service under existing conditions. A nurse-midwife service such as Mary Breckinridge has organized in the Kentucky mountains, if sufficiently developed, might lead to a marked decrease in the maternal mortality rate of the United States.

141 East Wisconsin Avenue.

IMMATURE WHITE BLOOD CELL COUNTS IN INFECTIOUS DISEASES *

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The purpose of total white blood cell and differential counts is to aid in diagnosis and prognosis. The typical textbook account of an acute infectious disease describes a leukocytosis and polynucleosis accompanying the rise in temperature and the appearance of symptoms and signs. It is a common experience, however, that frequently the most serious conditions are associated with an apparent depression of the myelocytic response.

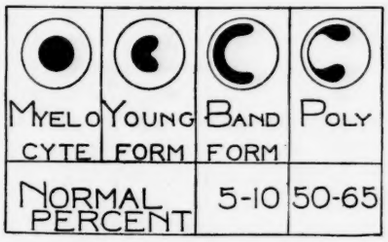

Chart 1.—Schilling index: Distribution of myelocytic cells in peripheral blood. An increase in immature forms results in a shift to the left.

In an attempt to obtain clearer correlation between the clinical picture and the white cell response, total white blood counts and Schilling index determinations were made in about 200 subjects, which included controls and patients admitted as a routine to the wards of the Second Medical Division of Bellevue Hospital.

Total counts were made with standardized pipets and, as far as possible, each patient was studied during the same time of day. The Schilling counts were performed on cover slips, stained with Wright's stain and prepared at the same time that the blood was drawn for the white counts. The nomenclature used for the Schilling counts was myelocyte, young form, band form and polymorphonuclear (chart 1). In the work presented in this report the normal count was considered from 5 to 10 per cent band forms and from 50 to 65 per cent polymorphonuclear cells. This is a somewhat higher band form percentage than the 4 to 7 per cent which Schilling [1] considers normal, but the same kind of cell was included in all counts on all subjects. In the normal individual no myelocytes or young forms occur. It can be seen that, when myelocytes or young forms appear in the blood or when there is an increased response on the part of the bone marrow to throw out

TABLE 1.—*Total White Blood Cell Count on Admission*

Number of White Blood Cells	Pneumonia				Upper Respiratory Infection	Pulmonary Tuberculosis	Lung Abscess	Arthritis, Rheumatic Fever	Cerebrospinal Meningitis	Cardiac Disease	Miscellaneous and Control
	Living	Dead	Complications	Total							
1- 5,000....	2	6	..	8	1	2	..	..	..	..	8
5-10,000....	9	11	2	22	13	7	3	4	1	5	15
10-15,000....	10	4	..	14	6	1	..	3	2	6	10
15-20,000....	13	4	..	17	2	..	..	..	..	3	2
20-30,000....	9	4	2	15	..	1	2	..	..	..	..
30-40,000....	1	1	..	2	..	..	1	..	..	..	2

* From the Department of Medicine, Cornell University Medical College and the Second Medical (Cornell) Division, Bellevue Hospital.

1. Schilling, V.: Über die Notwendigkeit gründsätzlicher Beachtung der neutrophilen Kernverschiebung in Leukozytenbilde und über praktische Erfolge dieser Methode, Ztschr. f. klin. Med. **89**: 1, 1920.

immature forms, this is manifested in chart 1 as a shift to the left.

Table 1 gives the total white blood cell count arranged according to the chief medical conditions studied in 178 patients. The striking feature of this study is that only forty-seven, or 26 per cent, of these patients had more than 15,000 total white blood cells per cubic millimeter of blood, while eighty-nine, or 50 per cent, of these subjects had counts of less than

TABLE 2.—*Percentage of Polymorphonuclears on Admission*

Percentage of Polymorphonuclears	Pneumonia				Upper Respiratory Infection	Pulmonary Tuberculosis	Lung Abscess	Arthritis, Rheumatic Fever	Cerebrospinal Meningitis	Cardiac Disease	Miscellaneous and control
	Living	Dead	Complications	Total							
Less than 50	1	3	..	4	1	..	..	..	..	..	4
50–60	..	..	..	..	3	2	..	1	..	3	7
60–70	3	3	..	6	6	2	1	2	..	1	12
70–80	8	2	3	13	4	3	3	4	..	5	9
80–90	21	11	..	32	8	3	1	..	3	5	5
90–100	11	11	1	23	..	1	1	..	..	..	..

10,000. If the seventy-eight patients suffering from pneumonia are considered, thirty-four, or 44 per cent, had counts of more than 15,000 and thirty, or 38 per cent, had counts of less than 10,000. This indicates that even in acute infections the total count does not mirror the severity of the infection. This is further borne out by the fact that of the thirty patients with pneumonia who died, seventeen, or 57 per cent, had counts of less than 10,000.

Table 2 gives the percentage of polymorphonuclears in the subjects studied. Although 71 per cent of all the patients suffering from pneumonia had more than 80 per cent of polymorphonuclears, there is considerable scattering in all conditions, and even in pneumonia 13 per cent of the patients had less than 70 per cent of polymorphonuclears.

TABLE 3.—*Percentage of All Cells Which Are Immature Polymorphonuclears*

Percentage of Immature Cells	Pneumonia				Upper Respiratory Infection	Pulmonary Tuberculosis	Lung Abscess	Arthritis, Rheumatic Fever	Cerebrospinal Meningitis	Cardiac Disease	Miscellaneous and Control
	Living	Dead	Complications	Total							
1–10	1	..	..	1	..	1	..	4	..	6	19
10–20	6	3	1	10	3	1	2	1	..	5	7
20–30	13	3	2	18	12	6	1	2	2	2	8
30–40	9	9	..	18	4	2	1	..	1	1	2
40–50	7	4	1	12	1	1	2	..	..	..	1
50–60	7	7	..	14	..	..	..	..	..	..	..
60–70	1	3	..	4	..	..	..	..	..	..	..
70–80	..	..	..	..	..	..	..	..	..	..	..
80–90	..	1	..	1	..	..	..	..	..	..	..

If neutrophilic polymorphonuclears are grouped according to maturity into two classes, e. g., (*a*) immature, including myelocytes, young forms and band forms, and (*b*) mature, or segmented forms, an analysis of such a distribution in the patients studied indicates that there is a closer correlation between the blood count and the clinical picture. Thus, table 3 shows the percentage of all the cells that are immature polymorphonuclears, and table 4 gives the percentage of all polymorphonuclears that are immature. Both illustrate the importance of considering the number of immature polymorphonuclears in a study of the case and indicate that the acute severe infections are accompanied by a marked increase in the young forms or by a shift to the left. Thus, table 4 shows that in pneumonia, acute upper respira-

TABLE 4.—*Percentage of All Polymorphonuclears Which Are Immature*

Percentage of Immature Cells	Pneumonia				Upper Respiratory Infection	Pulmonary Tuberculosis	Lung Abscess	Arthritis, Rheumatic Fever	Cerebrospinal Meningitis	Cardiac Disease	Miscellaneous and Control
	Living	Dead	Complication	Total							
1–10	..	..	..	..	..	1	..	4	..	6	18
10–20	2	..	..	2	..	1	2	1	..	5	7
20–30	8	4	1	13	6	6	1	2	2	2	8
30–40	13	2	2	17	2	2	1	..	1	1	3
40–50	7	8	1	16	4	1	2	..	..	..	1
50–60	8	3	..	11	1	..	..	..	..	..	..
60–70	5	8	..	13	..	..	..	..	..	..	..
70–80	1	1	..	2	..	..	..	..	..	..	..
80–90	..	3	..	3	..	..	..	..	..	..	..
90–100	..	1	..	1	..	..	..	..	..	..	..

tory infections, pulmonary tuberculosis (usually accompanied in these patients by acute signs), cerebrospinal meningitis and such miscellaneous conditions as septicemia, typhoid, pyelonephritis and infected neoplasm more than 20 per cent of all the polymorphonuclears

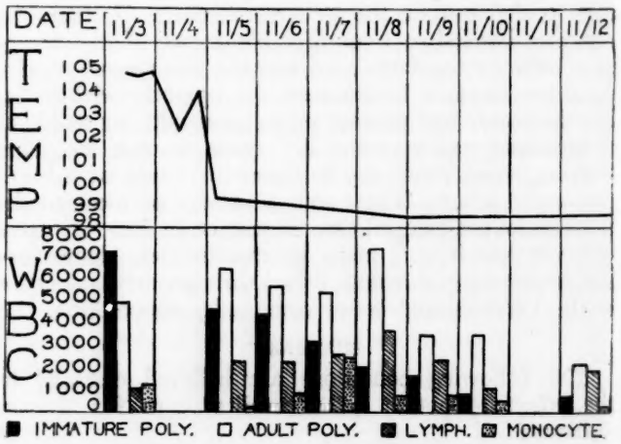

Chart 2.—Schilling index in a pneumonic patient who recovered.

TABLE 5.—*Schilling Index in Pneumonic Patient Who Recovered*

Date	White Blood Cells	Percentage of Myelocytes	Percentage of Young Forms	Percentage of Band Forms	Percentage of Polymorphonuclears	Percentage of Lymphocytes	Percentage of Monocytes	Percentage of Eosinophils	Percentage of Basophils
Nov. 3	13,100	9	21	23	29	8	9	1	0
Nov. 5	12,400	0	4	33	42	17	1	3	0
Nov. 6	13,200	0	4	30	41	16	7	2	0
Nov. 7	14,200	0	4	18	37	19	17	3	2
Nov. 8	13,000	0	0	15	55	26	3	0	1
Nov. 9	8,100	0	2	17	42	28	9	2	0
Nov. 10	5,700	0	0	14	59	19	6	2	0
Nov. 12	4,700	0	0	8	43	39	5	4	1

are immature. This is not true of controls or patients more chronically ill. A normal person does not have more than 10 per cent of all cells which are immature polymorphonuclears and never more than 17 per cent of all polymorphonuclears which are immature. It is obvious that the shift to the left is most marked in patients who are severely infected. Thus, in 80 per

cent of all the patients who died from pneumonia, more than 30 per cent of all the cells were immature polymorphonuclears and more than 40 per cent of all the polymorphonuclears were immature, whereas of those who recovered only 55 per cent showed more than 30

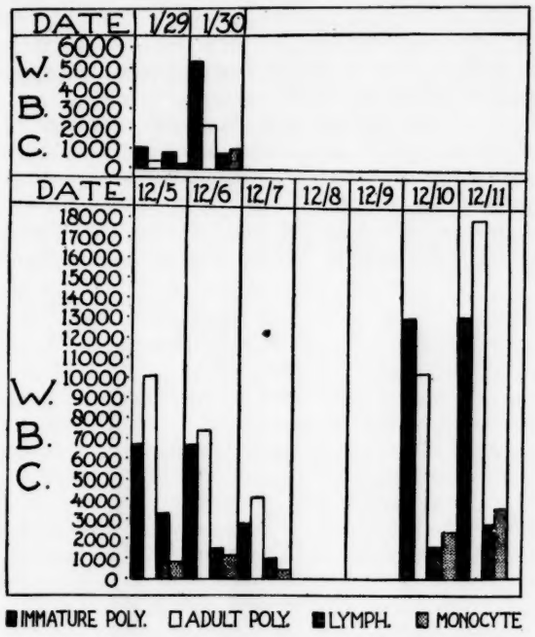

Chart 3.—Schilling index in two pneumonic patients who died.

TABLE 6.—*Schilling Index in Two Pneumonic Patients Who Died*

Date	White Blood Cells	Percentage of Myelocytes	Percentage of Young Forms	Percentage of Band Forms	Percentage of Polymorphonuclears	Percentage of Lymphocytes	Percentage of Monocytes	Percentage of Eosinophils	Percentage of Basophils
Patient A									
Jan. 29.....	2,000	0	15	42	11	26	6	0	0
Jan. 30.....	8,500	2	10	50	23	5	10	0	0
Patient B									
Dec. 5.....	21,000	0	3	29	48	15	4	0	1
Dec. 6.....	16,500	1	6	32	44	9	7	1	0
Dec. 7.....	8,200	0	3	30	49	10	7	0	1
Dec. 10.....	26,900	1	7	40	38	6	8	0	0
Dec. 11.....	36,600	1	3	30	48	7	10	0	1

per cent of all their cells immature polymorphonuclears and only 48 per cent showed more than 40 per cent of all their polymorphonuclears immature.

Probably the best way to understand the significance of the Schilling index is to study illustrative cases in which counts were performed at regular intervals. Table 5 and chart 2 show the course of one of the patients with pneumonia who recovered, which is typical for this condition. The details can readily be seen in the chart and the number of cells is expressed in absolute terms. The striking features of this condition are the marked shift to the left at the onset of the disease, as shown by the preponderance of immature cells represented by the black area and detailed in the table, and the gradual shift back to the right and the increase in mature polymorphonuclears during recovery. Another interesting feature, which has been studied in detail by Schilling [2] and by Hickling,[3] is the increase in monocytes and lymphocytes at various stages of the recovery process. An important feature of the recovery process in pneumonia is the persistence of a high immature polymorphonuclear count for a considerable time after the subsidence of fever and quiescence of symptoms. In the cases reported here, correlation between the shift to the left and the persistence of exudate as shown by physical and roentgenographic signs was not made.

Chart 3 and table 6 illustrate the nature of the cellular response in two of the fatal cases of pneumonia studied. The striking feature is the marked shift to the left as the disease progresses to death, represented in both patients by the last day of blood count. In patient B improvement, on December 7, coincided with a shift to the right. The prognosis was so favorable that no counts were performed on the 8th and 9th. December 10, the patient had a relapse and died on the following day.

The relation of the Schilling index to complications in pneumonia is illustrated in chart 4, accompanied by table 7. The patient had a type 2 pneumococcus infection, was treated with Felton's concentrated serum, and on February 19 began to improve. On the 21st his count, taken in the morning, showed a shift to the left, seen

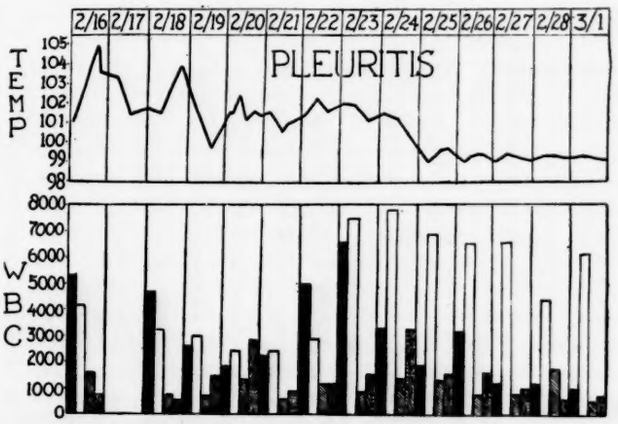

Chart 4.—Schilling index in pneumonic patient who recovered after developing pleuritis.

TABLE 7.—*Schilling Index in Pneumonic Patient Who Recovered After Developing Pleuritis*

Date	White Blood Cells	Percentage of Myelocytes	Percentage of Young Forms	Percentage of Band Forms	Percentage of Polymorphonuclears	Percentage of Lymphocytes	Percentage of Monocytes	Percentage of Eosinophils	Percentage of Basophils
Feb. 16.....	11,900	0	5	39	35	13	7	1	0
Feb. 18.....	9,400	1	13	35	34	9	7	0	1
Feb. 19.....	7,300	1	3	29	38	10	17	1	1
Feb. 20.....	8,600	0	1	21	31	15	32	0	0
Feb. 21.....	5,800	0	0	38	41	6	15	0	0
Feb. 22.....	10,400	0	3	45	27	11	11	3	0
Feb. 23.....	16,000	0	4	36	46	4	9	0	1
Feb. 24.....	15,700	0	0	21	50	8	20	1	0
Feb. 25.....	11,800	0	0	17	58	10	14	1	0
Feb. 26.....	11,900	0	0	26	56	5	13	0	0
Feb. 27.....	9,900	0	0	13	67	9	10	1	0
Feb. 28.....	8,000	0	0	14	54	21	6	2	3
Mar. 1.....	8,200	0	0	10	72	7	8	1	2

best in table 7. That night he developed signs and symptoms of a pleuritis which was accompanied on succeeding days by a continuation of a shift to the left. His gradual recovery was accompanied by a shift back to the right, as demonstrated by the chart and table. A noteworthy feature of this case, seen with sufficient frequency to merit emphasis, is the fact that the

2. Schilling, V.: Das Hämogramm in der Poliklinik, Ztschr. f. klin. Med. **99**: 232, 1924.
3. Hickling, R. A.: The Monocytes in Pneumonia, Arch. Int. Med. **40**: 594 (Nov.) 1927.

increased shift to the left heralding the onset of the complication preceded the onset of the symptoms or signs by many hours.

Chart 5 and Table 8 illustrate the help that the Schilling index offers in some problems of diagnosis and

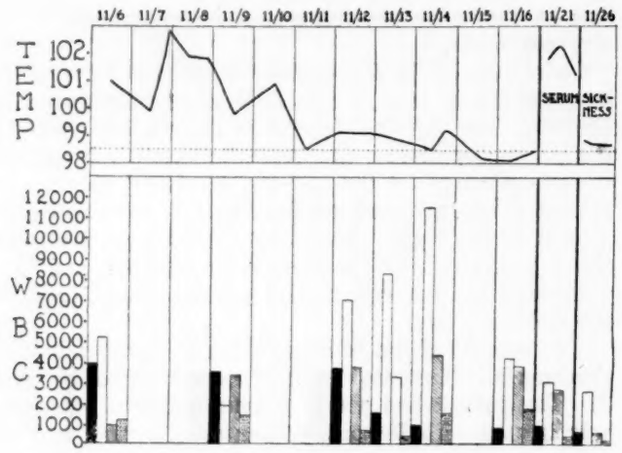

Chart 5.—Schilling index in patient who had cerebrospinal meningitis and developed serum sickness.

TABLE 8.—*Schilling Index in Patient Who Had Cerebrospinal Meningitis and Developed Serum Sickness*

Date	White Blood Cells	Percentage of Myelocytes	Percentage of Young Forms	Percentage of Band Forms	Percentage of Polymorphonuclears	Percentage of Lymphocytes	Percentage of Monocytes	Percentage of Eosinophils	Percentage of Basophils
Nov. 6.....	11,700	1	3	32	44	9	10	1	0
Nov. 9.....	10,400	0	5	26	22	30	15	1	1
Nov. 12.....	15,400	0	0	23	47	23	5	2	0
Nov. 13.....	15,100	0	1	10	60	22	3	4	0
Nov. 14.....	19,400	0	1	5	60	25	9	1	0
Nov. 16.....	11,200	0	0	6	45	37	9	3	0
Nov. 21.....	7,300	0	0	10	44	39	5	2	0
Nov. 26.....	8,200	0	0	5	33	55	2	5	0

therapy. The patient was a young girl of 14 suffering from meningococcus meningitis. During the course of her illness she showed a shift to the left and with recovery a shift back to the right. November 21, after about ten days of freedom from any signs or symptoms, she suddenly had a fever of 102 F. and became very toxic; and a recurrence of the meningeal signs was suspected. As can be seen in the chart and in table 8, a blood count showed no shift to the left (10 per cent band forms). In spite of the count, the interns were about to perform a lumbar puncture when they noticed that the patient began to complain of joint pains, which established a diagnosis of serum sickness. In this case the count mirrored the true clinical condition and indicated an absence of infection.

Several medical conditions were studied, and chart 6 and table 9 give the results obtained in some. For example, the shift to the left in active tuberculosis is evident. In the patient with acute pneumonic phthisis, the shift on the day of death is very marked without any apparent change in the percentage or absolute count of other cells than those of myelocytic origin.

A frequent problem in the wards of a general hospital is to differentiate between an acute surgical abdominal condition and a gastro-intestinal upset. Chart 6 and table 9 illustrate the course of the condition in one of two patients who had an elevation of temperature to 100.5 F., nausea, and some rigidity and tenderness in the right lower quadrant. As indicated in the table, no shift to the left was apparent and after an enema all symptoms and signs suggestive of acute appendicitis disappeared. The Schilling index has been found by Richter [4] to be of considerable aid in the diagnosis of acute appendicitis, because normal total white blood cell and polymorphonuclear counts and slight or moderate elevation of temperature are not infrequently encountered with rather marked lesions of the appendix, especially of the gangrenous type.

Chart 6 and table 9 also illustrate examples of two conditions, typhoid and acute infectious mononucleosis, in which the polymorphonuclear count ordinarily is not considered of any significance. In both diseases there is a marked shift to the left. This was true of all patients with typhoid (four) studied in the wards.

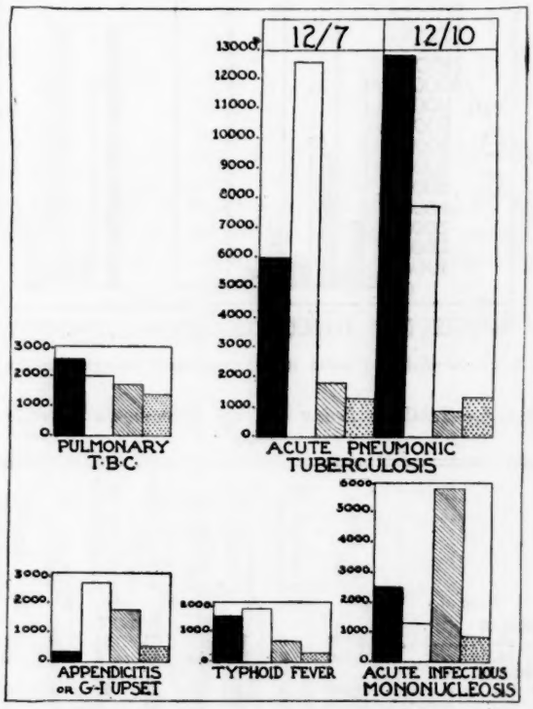

Chart 6.—Schilling indexes in miscellaneous conditions.

TABLE 9.—*Schilling Indexes in Miscellaneous Conditions*

Date	White Blood Cells	Percentage of Myelocytes	Percentage of Young Forms	Percentage of Band Forms	Percentage of Polymorphonuclears	Percentage of Lymphocytes	Percentage of Monocytes	Percentage of Eosinophils	Percentage of Basophils
A. Pulmonary tuberculosis									
	8,600	0	1	29	24	20	1	1	0
B. Acute pneumonic tuberculosis									
Dec. 7.....	21,300	0	0	28	59	7	6	0	0
Dec. 10.....	22,900	2	10	44	34	4	5	0	1
C. Appendicitis or gastro-intestinal upset?									
	5,400	0	0	6	53	31	7	2	0
D. Typhoid									
	4,000	3	9	25	44	15	4	0	0
E. Acute infectious mononucleosis									
	10,200	1	2	22	12	56	7	0	1

COMMENT

The response of the bone marrow is dependent on several factors. Sabin [5] groups hematopoietic activity into two classes, maturative and chemotactic. Ordinarily these two keep pace with each other, so that the

4. Richter, M.: Personal communication to the author.
5. Sabin, F. R.: Bone Marrow, Physiol. Rev. 8: 191 (April) 1928.

proportion of young cells shows no marked fluctuation. But when a sudden strain is put on the organism, such as an infection, there is an outpouring of cells at such a rate that maturation cannot keep pace with the chemotactic call and young cells appear in increased number in the peripheral blood. The nature of the substance setting in motion this mechanism is not yet known, but Doan and his co-workers [6] and I [7] have shown that nucleotides will produce marked leukocytosis after intravenous injection. In the experiments described in this paper a shift to the left was obtained not only in infections but in a few cases of acute hemorrhage and in one patient with a lung embolism, two days after the infarct was diagnosed. In the last case it might be suspected that the cellular response was not elicited until after the tissue change in the infarct produced some substance to call forth this condition.

A striking feature of studies in which counts are taken at regular intervals is that the cellular response, as indicated by the shift to the left, precedes other evidences of abnormality, such as fever or pain, by several hours, sometimes as much as one day. This is especially valuable when the onset of empyema is suspected. The cell count also lags behind the subsidence of symptoms and signs, making it imperative to do regular counts, at least daily, so that the direction of the change can be learned. Isolated counts sometimes give very erroneous results and never complete information.

A discussion of the relative merits of the Schilling index [8] and that of Arneth [9] is beyond the scope of this work. It is clear that for routine clinical work the simpler Schilling method is quite satisfactory and time saving.[10]

The clinician has great need for such a procedure as the Schilling index. The limitation of merely a total and ordinary differential count is evident.[11] In many cases normal figures are obtained in patients who are desperately ill. It is especially in these conditions that the shift to the left is marked.

The time required to make a Schilling count is only slightly more than that necessary for performing the ordinary differential count and it can easily be made by interns and technicians. Whenever a patient's condition demands help to determine the diagnosis or the prognosis, a Schilling index is desirable. The proper care of patients, therefore, should make such a study a routine procedure.

CONCLUSIONS

1. Total white blood cell and differential counts cannot be correlated with signs and symptoms in acute infectious diseases with sufficient frequency or constancy to make such procedure alone markedly valuable.

2. The Schilling index gives evidence of the response of the bone marrow to the stimulus of pathologic conditions by demonstrating an increase in immature cells of myelocytic origin in the peripheral blood; e. g., a shift to the left.

3. Such a count mirrors the presence and the intensity of a pathologic process (infection) and, when performed at regular intervals, gives an excellent indication of the prognosis, sometimes before any other sign is available.

6. Doan, C. A.; Zerfas, L. G.; Warren, S., and Ames, O.: A Study of the Mechanism of Nucleinate-Induced Leukopenic and Leukocytic States, with Special Reference to the Relative Rôles of Liver, Spleen and Bone Marrow, J. Exper. Med. **47**: 403 (March) 1928.

7. Reznikoff, Paul: Experimental Leukocytosis and Leukopenia, J. Clin. Investigation **6**: 16 (Aug.) 1928.

8. Schilling, V.: Kritik der Arnethschen Lehre von der Verschiebung des leukozytären Blutbilde und Wertung ihrer klinischen Anwendbarkeit, Folia Hæmat. **12**: 130 (July) 1911.

9. Arneth, J.: Die neutrophilen Leukozyten bei Infectionskrankheiten, Deutsche med. Wchnschr. **30**: 54, 92 (Jan. 7, Jan. 14) 1904.

10. Schilling, V.: Die Zeitdauer praktischer Blutbildesstimmung, Deutsche med. Wchnschr. **48**: 904 (July 7) 1922.

11. Hellwig, C. A.: Leukocyte Count in Acute Appendicitis, Kansas M. Soc. J. **29**: 330 (Oct.) 1928.

PSYCHOGENIC FACTORS AND PRECIPITATION POINT IN THE POST-TRAUMATIC NEUROSES

A GRAPHIC STUDY OF A SELECTED GROUP OF CASES OTHER THAN HEAD INJURIES *

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AND
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A traumatic neurosis, as commonly defined, is a psychoneurosis following trauma but presenting no organic neurologic background. The diagnosis is frequently made by elimination of organic causes, and the only psychic factors seriously considered are those of litigation and desire for compensation. Yet these cases on analysis often yield a surprising wealth of other adverse mental complexes and influences, among which may be mentioned mental shock or fear states, poverty, deformities, lack of occupation or interest, unfavorable suggestion of different sorts, including suggestion of serious disability because of continued compensation, combined with introspection and meditation, wrong diagnoses, improper or unskilled treatment, desire for redress against alleged negligence, marital difficulties, bereavements, unfavorable environmental influences, or return to arduous or unsuitable work. It is our purpose to emphasize the importance of the different adverse psychologic factors concerned, and to give them the same importance as they have in the investigation of any nontraumatic neurosis. The term traumatic neurosis has been unfortunate in implying that trauma, by some unexplained organic pathologic mechanism, has created a state of neurosis other than the ordinary forms. For some time we have used the term post-traumatic neurosis as preferable.

Great difficulties are experienced in obtaining an accurate history of character and temperament, hereditary background and previous neurotic episodes in the ordinary industrial patient, for the reason that such a patient is loath to give any information which he thinks would be considered damaging to his claim, and also because of the uneducated and inferior intellectual type frequently encountered. The group selected for this study returned to work at some period but were still under observation or were receiving compensation, and continued to run the course of a neurosis. By the time of their return to work, even temporarily, an efficiency point was estimated, and subsequent states of efficiency or of inefficiency determined by comparison. Head injuries were excluded because of the possibly complicating factors of brain injury.

A characteristic of the post-traumatic neuroses is the striking discrepancy between the claimed occupational inefficiency of the patient and the dearth of substantial physical manifestations and objective signs of disability. Factors having a bearing on this phase of the problem were therefore investigated, and the following out-

* Read before the Fifty-Fifth Annual Meeting of the American Neurological Association, Atlantic City, May 29, 1929.

line was made, which is suggested as an outline for examination:

1. The nature and severity of the injury, classified as slight, medium or severe.
2. The date of the first sign of increased efficiency.
3. The date of the first unfavorable influence, and of all other unfavorable influences.

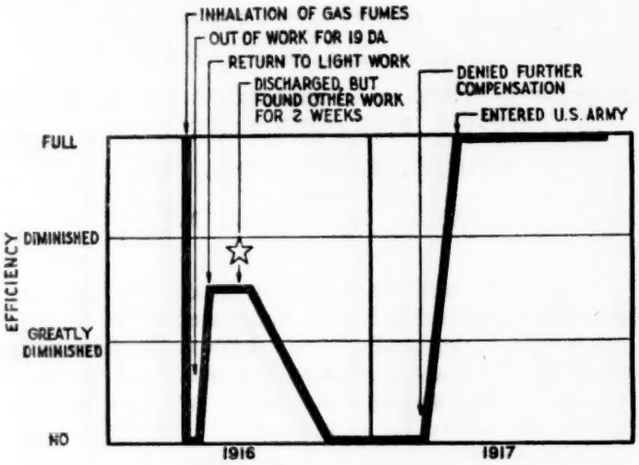

Fig. 1.—Graphic record of case 1.

4. The date of return to work, and estimated industrial efficiency, in terms of former work—full, diminished or greatly diminished.
5. Dates of subsequent known efficiency, with rating.
6. Date of cessation of work, if work has been discontinued.
7. Efficiency at time of examination in terms of former work—full, diminished or greatly diminished.

The date of the first sign of increased efficiency may be the time of leaving the hospital, or increased activity, or efficiency of any definite record. In the patients not returning to industrial occupation, thus differing from those of this series, it may serve as a point of judged occupational efficiency.

Negative influences are any adverse psychic factors operative in the psychoneuroses. Exact dates are not always available and, in certain instances, monetary considerations of compensation and litigation must be regarded as the outstanding negative influences. These influences were generally outlined at the beginning of this paper and will also be illustrated in individual case reports to follow. The dates of known efficiency with rating correspond to work periods or admitted efficiency. The efficiency at the time of the last examination corresponds to the industrial performance of the patient at the time.

PRECIPITATION POINT

Another characteristic of the post-traumatic neuroses is an unusual course of the efficiency or work curve, when once a point of efficiency is established. Contrary to the expectation of a gradual increase of efficiency, there is either an arrest or, what more often happens, a decided falling off, or a total inefficiency. This point of negative departure, when fitness is expected to parallel tissue repair and restored organic function, we have called the precipitation point of the neurosis; it generally falls at the beginning of the down curve of the graph and is an expression of the climax of the period of meditation, resulting in the fixation of the neurosis. The elapsed time to the precipitation point is figured from injury, as a more definite point of departure than the first negative influence. Indeed, we here emphasize the point, to which attention has been called by other investigators, that a neurosis has no relationship to the severity of the injury, and, further, that the period of meditation begins early in all cases. The precipitation point in our series takes place relatively early, i. e., 107 days from the time of injury for the average of all cases. It is our purpose in this paper to emphasize the importance of the early identification of the precipitation point in the post-traumatic neuroses by means of a study of occupational efficiency, psychogenic factors, and clinical symptoms and signs.

MATERIAL

The material of this paper deals for the most part with industrial accidents under the state compensation law in which the usual unfavorable elements of compensation, idleness and unfavorable suggestion are complicating factors. The patients were referred largely because of a suspected neurosis and had been previously examined and treated for their especial injury, often by a number of different physicians. Our examination included a review of the complete medical files, a statement of the claimant, a general physical survey and a complete neurologic examination in each case, with a written report to the insurance carrier or to the industrial accident commission for the purpose of a rating or award. In the following case reports, only the significant positive and negative observations are recorded for the sake of brevity. We have a record of 298 cases in which a diagnosis of post-traumatic neurosis was made; of these, 141 showed head injuries and 157, injuries exclusive of those of the head. Of the latter cases, thirty-seven in which there was known efficiency for work as demonstrated by actual return to work were selected and charted, following the foregoing outline for examination. They form the bases of this study. Six case reports have been abstracted and graphically represented. Graphs of the precipitation point, duration of the neurosis, and severity of the injury were also made. In the individual case, the graph of the precipitation point is marked with a star.

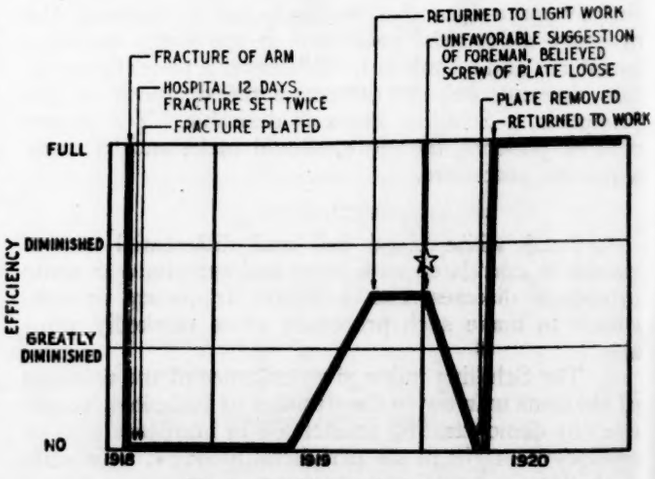

Fig. 2.—Graphic record of case 2.

REPORT OF CASES

CASE 1.—*Industrial accident compensation case. Slight injury by inhalation of gas fumes. Ten months later, a neurasthenic symptomatology without discernible cause related to injury, and neurologic examination negative as related to injury. Unfavorable psychic factors: belief of seriousness of injury and of inadequate medical attention. Precipitation point three*

months after injury; was denied further compensation eleven months after injury. Returned to full occupation two months after further compensation was denied.

History.—An American laborer, aged 36, was overcome by sulphuric and sulphurous acid gas fumes, April 7, 1916, and remained dizzy and faint. After nineteen days he returned to work for a day and a half; then, after a few days' interval,

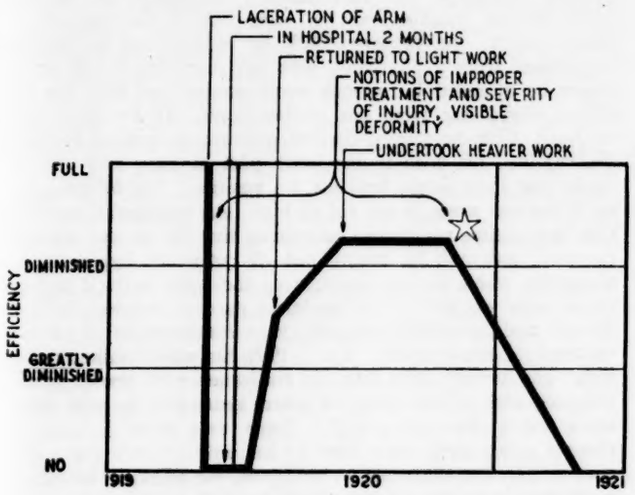

Fig. 3.—Graphic record of case 3.

he resumed light work for two months. He was discharged, but did light work in three other different employments for two weeks, and from then on was unoccupied up to the time of the first neurologic examination. He alleged incapacity for work because of numerous neurasthenic complaints of a general nature, such as joint pains, stiffness, vertigo, fatigue, sleepiness, irritability, fearfulness, and poor circulation and poor memory, of which he still complained at the time of the first neurologic examination, Feb. 3, 1917.

Examination.—The general physical state appeared excellent; he was well muscled and inclined to obesity. Nothing remarkable was found in the different visceral systems. His gait favored the right lower extremity, and there was a slight atrophy in the calf muscles on this side. The right achilles reflex was weaker than the left. The great toe position was apparently not recognized so well on this side; also, in the right heel-to-knee test there was always a past pointing in the same position and degree. Superficial sensation was reduced over the whole body, more markedly in the lower extremities. The objective observations in the right leg were explained by a severe compound fracture of this leg in childhood. The right elbow was partly ankylosed, and crepitation was felt in the knees.

The diagnosis in this case was arthritis and a state of neurosis.

Comment.—Psychogenic factors were a belief in the seriousness of the injury, and lack of proper medical attention. The patient was denied further compensation payments, March 12, 1917. In May, 1917, he entered the United States Army, in the Quartermasters Reserve Corps, as an automobile driver, having passed the physical examination of entrance. He was still in this occupation in October, 1917, when seen by a physician.

CASE 2.—*Industrial accident compensation case. Medium injury: fracture of arm with traumatic radial palsy. After return to light occupation, persisting symptoms of extreme pain and weakness led to neurologic examination yielding nothing significant of organic disability. Psychic deterents: worry about metal plate in arm, fixed ideas of impairment of extremity, and unfavorable suggestion. Returned to full work after removal of arm plate. Investigation of case reopened, again with negative signs of pathologic changes in the nerves or bones. Precipitation point seventeen months after injury.*

History.—An American miner, aged 49, fractured his right arm, Aug. 2, 1918, and also injured the radial nerve. August 24, the bone was splinted by a silver plate. In May, 1919, he was able to extend his wrist. He did light work from Oct. 5, 1919, to Jan. 5, 1920. At the first neurologic examination, Jan. 17, 1920, he complained of pain in the whole of the affected extremity, and of weakness of the hand. He was worried and introspective about his condition, believed that there was a screw loose in the plated bone, and called attention to a suspected difference in the tendons of the thumbs.

Examination.—The neurologic status showed no organic residuals of the radial nerve palsy, but there were exceedingly lively tendon reflexes throughout, with tremor of the extended fingers and marked cyanosis of all extremities.

Course.—In April, 1920, the arm plate was removed, and the patient returned to full occupation following the operation. In December, 1920, he was reexamined at the request of the industrial accident commission, having in the meanwhile dismissed ideas of further compensation from his mind. He still complained of pain and fatigability in the affected extremity but stated that he was able to row a boat or wield a sledge hammer. The mental analysis of this patient revealed a decided tendency toward introspection and suggestibility; he had the idea that after fractures muscles do not fully regain their attachments, and his foreman told him that he was permanently disabled. His complaints were gone into with a wealth of detail. An opinion was expressed that no industrial disability remained.

The diagnosis was fracture of the arm (healed) and post-traumatic neurosis.

CASE 3.—*Industrial accident compensation case. Medium severe injury by laceration of forearm. Unfavorable mental factors: notions of improper treatment, severity of injury, and visible deforming scar. Hysterical anesthesia of extremity without organic manifestations. Precipitation point eleven months after injury on cessation of moderately heavy work.*

History.—An American cement mixer, aged 46, was injured, Nov. 19, 1919, by an extensive lacerated wound of the soft tissues in the right forearm by the gears of a cement mixer. He was in the hospital for two months. During the first six months there was little pain. Feb. 27, 1920, he returned to do light work with his old employer, but in the beginning of May, because of some misunderstanding or disagreement, he lost his position. For short periods from June to October he did moderately heavy work. We saw him, April 28, 1921, when he presented the complaints of stiffness, weakness, pain and numbness in the affected extremity, alleging total disability in the use of this extremity for any gainful occupation.

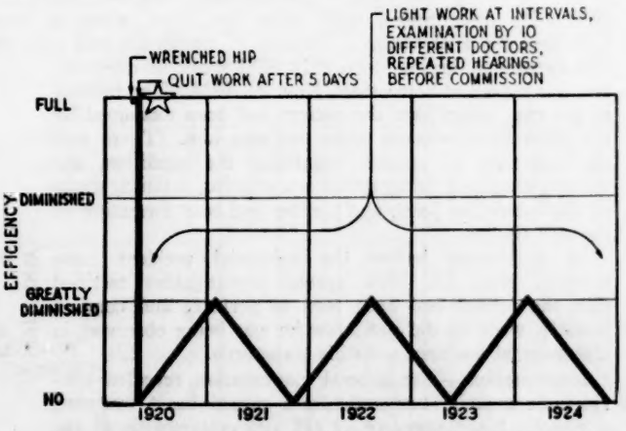

Fig. 4.—Graphic record of case 4.

Examination.—A soft scar was found on the lower third of the ulnar border of the forearm, measuring 5 by 2 cm. This scar was not adherent to the deep structures; there was no induration of the muscles, change in tonus or trophic disturbances. Measurements in the upper part of the two forearms were identical; all movements of the extremities were possible; the hand grips measured, right, 28 Kg., left, 42 Kg. The tendon reflexes were present and equal to those on the opposite side. The electrical reactions were normal. There was presumably some division of the branches of the internal cutaneous nerve, causing some anesthesia of the lower forearm, but the out-

standing sensory observation was a glove-shaped anesthesia and analgesia extending to the middle of the forearm. The extended fingers showed a coarse tremor in the affected extremity. The diagnosis was post-traumatic neurosis as the cause of alleged disability.

CASE 4.—*Industrial accident compensation case. Slight injury, wrench, of right lower extremity. Various opinions offered by ten different examiners over a period of four and a half years as to the cause of the alleged disability. An hysterical*

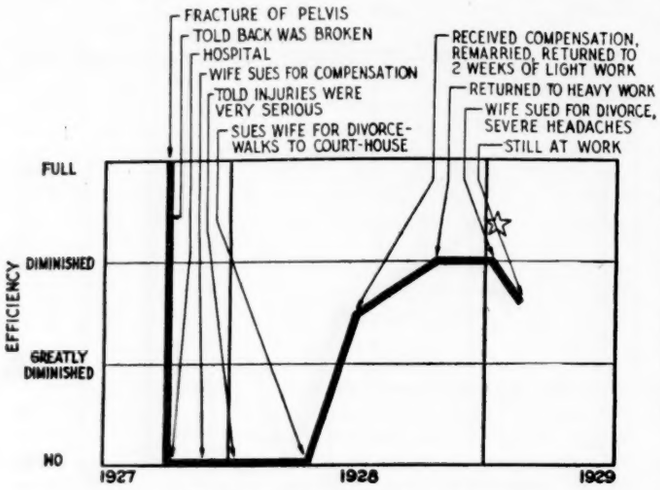

Fig. 5.—Graphic record of case 5.

anesthesia of the affected extremity, extending above the sciatic distribution, resulted in the diagnosis of a neurosis. The obvious negative influences in the case were too many examinations, leaving a doubt in the patient's mind as to an understanding of his case, and too many court hearings. Precipitation point a few days after injury, when occupation was discontinued. Light work at intervals, and industrial disability claimed over a period of four and a half years.

History.—A Slav bench worker, aged 47, while removing a cap from an air valve, loosed his hold on the wrench, which caused him to stagger to one side. He immediately felt a soreness in the right hip and, a few days later, lightning-like pains in the right leg and thigh. The accident occurred, April 20, 1920. He discontinued work after five days, when he was first seen by a physician. Because of numbness and pain in this extremity, he has done only light work at intervals, and has stayed at home since Nov. 20, 1924. The records in the case reveal that the patient had been examined by ten different physicians before we saw him. There was no unanimity of opinion regarding the condition, the various diagnoses being spinal ostearthritis, sciatica, strain of the sacro-iliac joint, and tearing and scar formation of the soft tissues.

In a hearing before the industrial accident commission, Nov. 14, 1924, special investigators testified that the patient had been seen to perform and conduct himself, when he did not know he was being observed, in a manner at variance with his statements.

Examination.—The general examination revealed considerable anemia, hemorrhoids, a mitral heart murmur, a systolic blood pressure of 175 and ostearthritis of the spine (roentgen diagnosis). The neurologic investigation (Nov. 28, 1924) gave negative results, except for an hysterical anesthesia of the affected extremity, extending to and involving the lower dorsal spinal roots well above the sciatic supply. Whereas the patient was obviously in ill health, the particular symptoms for which he claimed disability were clearly functional in origin. The neurologic diagnosis was post-traumatic neurosis.

CASE 5.—*Industrial accident compensation case. Severe injury: fracture of pelvis, healed. No important persisting neurologic disabling signs. Ultimate complaints of paresthesias, pain in the back and headaches. Important psychologic factors: belief of fractured spine, marital trouble, unfavorable medical suggestion. Precipitation point with oncoming of disabling headaches after final marital rupture.*

History.—An American railway engineer, aged 22, married, was injured in a lumber camp, Oct. 5, 1927, the major injury being a fracture of both pubic bones. He was led to believe that his back was broken at the time of the accident. He was hospitalized until December 4. On dismissal, a month's further disability was anticipated. November 27, he had some marital trouble, and his wife filed a lien against his compensation. In January, 1928, he received an unfavorable suggestion from a physician, who told him that a fall or jar might be attended by serious consequences and that his disability would last from one to five years. In the latter part of April, 1928, he started divorce proceedings against his wife. He rejoined his wife in the latter part of June and for two weeks did light work, but lost his position. He believed that an effort was made to get rid of him. An orthopedic examination at this time resulted in an opinion that the patient was able to work, although he complained of cutaneous hyperesthesias along the whole lumbar spine, over the right buttock and the right lower extremity. In the latter part of October, 1928, he started medium heavy work, which he continued up to the time of the final examination. Jan. 7, 1929, his wife "walked out on him," and several days later, in consequence of severe pain in the back and the oncoming of severe headaches, he was out of work for a day and a half. Some time after January 10, divorce proceedings were filed by his wife. When the patient was seen by the examiner, February 18, the principal complaints were pain in the lower part of the back and sacrum and down the inner parts of the thighs, and basal headaches, related by the patient to the symptoms in the lower part of the back. Nervousness and sleeplessness were additional complaints. The headaches were said to be more severe when he was not working.

Examination.—Organic residuals consisting of an absent right ankle jerk and slight atrophy of the right buttock were revealed on examination. Cutaneous hyperesthesias were found from the eleventh dorsal segment downward, in the right buttock and in the perineum. No motor disability and no objective signs about the head or cranial nerves were present.

The major diagnosis was post-traumatic neurosis, based on the oncoming of severe headaches and aggravation of spinal complaints after psychic trauma.

CASE 6.—*Industrial accident compensation case. Severe injury, fracture of third lumbar vertebra, unrecognized for four months. Three years later total disability still claimed because of general pain in the back, particularly low in the back, and numbness of legs. Final neurologic examination not*

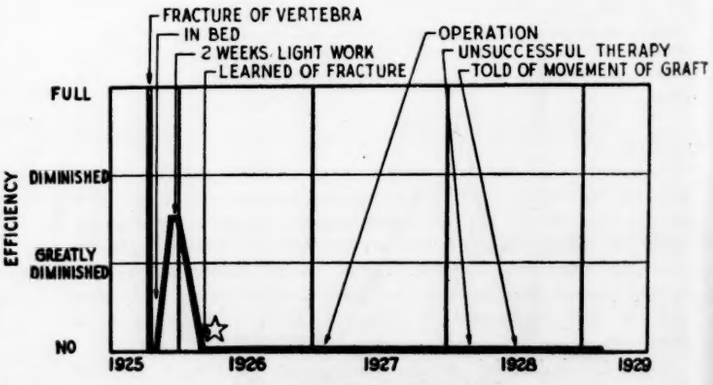

Fig. 6.—Graphic record of case 6.

remarkable except for analgesia over the whole surface of the face, extremities and body. Unfavorable psychic moments: fracture first overlooked; unsuccessful treatment by physical therapy; unfavorable medical suggestion; apprehensive state. Precipitation point following discovery of fracture.

History—An Italian carpenter, aged 45, married, was injured by a fall, Oct. 10, 1925. No paralyses, sensory losses or sphincter disturbances were present. He was hospitalized until October 26. Two months following the injury, he returned to light work for two weeks. In February, 1926, a fracture

of the third lumbar vertebra was demonstrated by the x-rays. The first treatment was rest in bed, with a plaster cast, and in February, 1927, because of persisting back pain, by operative treatment (Albee graft). A generalized mild spinal ostearthritis was present. Five months after the operation, the graft was firmly united, as demonstrated by the x-rays. The patient asserted that his condition was worse after the operation than before; he insisted that physical therapy during 1928 caused a setback. In the middle of 1928 he consulted a private physican, who said that there was movement in the grafted spines. He was much disturbed mentally by conflicting medical opinions and persisting symptoms. The examiner was the first neurologist to see the patient (Feb. 25, 1929), who had been exclusively under orthopedic specialists. At this date his symptoms were inadequately explained by the spinal condition. The complaints were generalized soreness and pain along the whole of the spine, especially the lumbosacral spine, over both buttocks, over the left tibia, numbness of the right leg, and a heavy feeling in the legs. Both operative scars were painful (over the lumbar region and over the tibial crest).

Examination.—A neurologic examination was not significant for persisting organic disability. The most remarkable neurologic finding was a total analgesia over all surfaces; a pin thrust under the finger-nails did not cause a reaction of pain. The diagnosis was fracture of the spine, healed; ostearthritis of the spine, and marked overlay of post-traumatic neurosis.

COMMENT

The early recognition of the precipitation point should be of practical value in diagnosis and in industrial rating. From the standpoint of values and with especial reference to compensation and litigation problems, it is

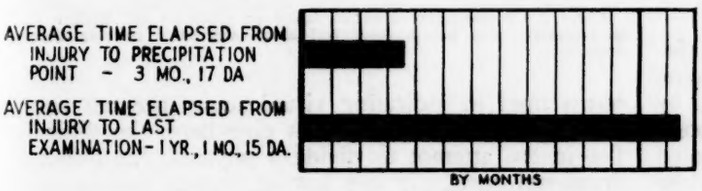
AVERAGE TIME ELAPSED FROM INJURY TO PRECIPITATION POINT - 3 MO., 17 DA
AVERAGE TIME ELAPSED FROM INJURY TO LAST EXAMINATION - 1 YR., 1 MO., 15 DA.
BY MONTHS

Fig. 7.—Time averages in thirty-seven cases.

not evident that the same compensation values should be placed on a condition of mind, over which the patient has considerable control, as on a condition of the body, over which the patient has no control. In the more aggravated forms of the neurosis, the reactions of the patient and his lack of will to do fairly establish his state as one which is not compensable for injury in the sense of industrial loss, but in which he is paid for idleness, resentment, covetousness and self pity. Although the literature on this subject is replete with instances of rapid return to work and efficiency after the termination of suits, compensation or denied awards, we do not hold that a neurosis is always predicated on the conscious operation of the baser motives in mental processes. Occasional patients who respond to psychotherapy and improve under a continuous compensation award clearly indicate the opposite. In any case, the recognition of the precipitation point of a neurosis is the most important single factor in the case, looking to a psychic therapeutic approach to a psychic condition. The average duration of the neurosis in the series up to the last examination was 405 days; the long average duration, therefore, is a striking proof of the inefficiency of the usual treatment by medical and physical therapeutic methods.

It is suggested that the precipitation point be taken as the basis of an approach to a settlement or closure of the case, on the grounds that removal of the unfavorable suggestion of compensable disability and return to occupation operate as beneficial measures for the patient.

This brings us to a consideration of the factor of responsibility in the establishment of negative influences. Our records show that the physician himself is often the very one to establish a doubt, cause a fear state, or frankly state a bad prognosis on insufficient evidence; this may be unintentionally done by a too sympathetic attitude or by too long continued treatment of a special nature, such as the long and unnecessary wearing of body braces and casts by patients with neuroses involving the back. It would be advisable that the specialist, when he examines these patients for the purpose of a report, should not commit himself to the patient, as doubtful prognoses and conflicting statements by different examiners are among the most serious of the negative influences.

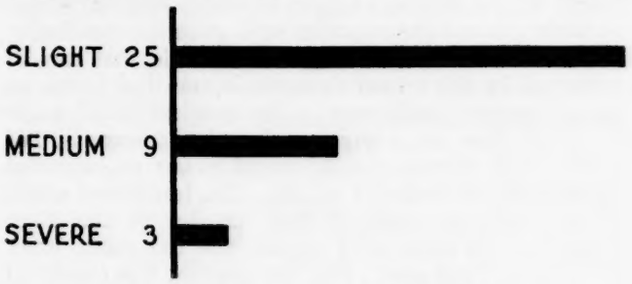

Fig. 8.—Classification of injury in thirty-seven cases.

CONCLUSIONS

The form of procedure outlined here has been found useful in examinations of the post-traumatic neuroses. The establishment of a post-traumatic neurosis may be identified by a precipitation point.

The precipitation point develops at a comparatively early period in the course of a post-traumatic neurosis.

The precipitation point may be identified by a point of negative departure of efficiency, by a climax of adverse mental influences occurring after meditation, and by the usual symptoms and signs of a psychoneurosis.

At the precipitation point, the complication of a psychoneurosis enters as a new factor of industrial disability and compensation.

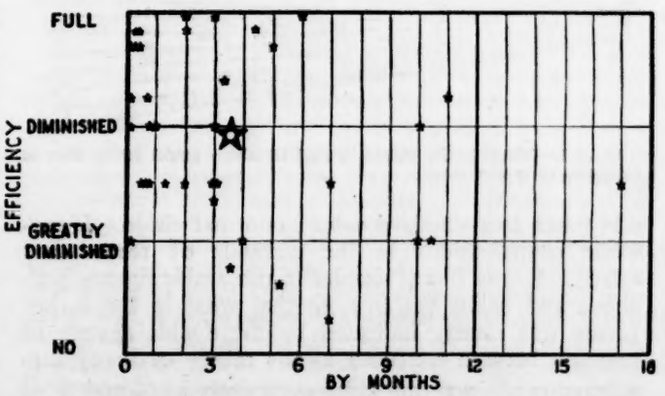

Fig. 9.—The individual precipitation points and the industrial efficiency in thirty-seven cases are indicated by the small stars, and the average precipitation point and industrial efficiency for the thirty-seven cases are shown by the large star.

A post-traumatic neurosis, when established, runs a relatively long course, and is resistant to the ordinary forms of medical treatment.

909 Hyde Street

THE FIVE MINUTE ANGLE AS A GENERAL FORMULA FOR RECORDING VISUAL ACUITY *

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When in 1862 Professor Snellen of Utrecht gave to ophthalmology a practical method of determining visual acuity, his purpose was largely to enable such variations as might occur to be recorded with scientific exactitude. It is well known that the smallest angle that can be perceived by the retinal elements is one that forms an image covering two cones. The smallest visual angle for black lines on a white surface is 52 seconds, but Snellen took the average of visual power as measured by an angle subtending 1 minute. The test letters which he devised form squares, each member of the letter subtending an angle of 1 minute and the entire letter an angle of 5 minutes. The formula that was employed to indicate the visual acuity was: V equals $\frac{d}{D}$, the V standing for visus, small d the distance at which the test object is placed, and the capital D the distance at which it ought to be seen when placed above the type. In order that these factors might be differentiated, the arabic figures were used above the line and the roman letters were placed below it; thus, V equals $\frac{20}{XX}$. This formula will be found in all the writings of the earlier ophthalmologists.

At the beginning of the present century a new element was introduced. Industry undertook to assume a degree of responsibility for the injuries sustained by employees while engaged in the pursuit of their labors. This was met by the payment of indemnities graduated in accordance with the visual losses. In order that the exact amount of loss sustained might be clearly specified, the courts required examiners to express in terms of percentages the loss sustained in each individual case. The ophthalmologist was required to interpret his visual readings in proportionate parts of 100 per cent, which

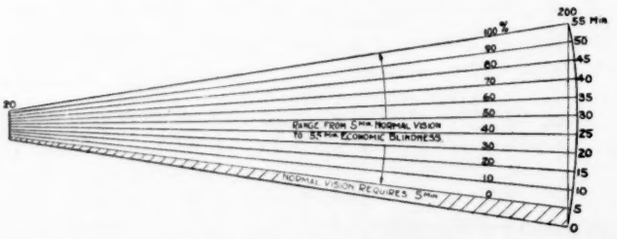

Chart 1.—Visual acuity should be read in minute angles rather than in fractions, as is now done.

was taken as a standard value in normal vision. Meanwhile complications in the methods of record had arisen. It was found simpler to use arabic figures both above and below the line, so that what in the earlier forms was clearly indicated by the double system of notation became confused in the minds of many into a fraction; $\frac{20}{20}$ was the same apparently as $\frac{20}{XX}$ and if $\frac{20}{20}$ indicated normal vision, $\frac{20}{40}$ it would seem must be half of normal vision or half sight, and half sight is another way of expressing the fact that the person examined is half blind. The absurdity of this conclusion is at once apparent to the practical refractionist; not so, however, to even the educated layman. Especially was this true in some of the courts in which this unwarranted claim received medical support.

Happily, after much labor, special committees appointed by this section, by the Academy of Ophthalmology and Oto-Laryngology and by the American Ophthalmological Society agreed on a working schedule under which the percentages of visual loss were more equitably proportioned.

The difficulty still persists, however, of making clear to those who are not familiar with visual tests that the

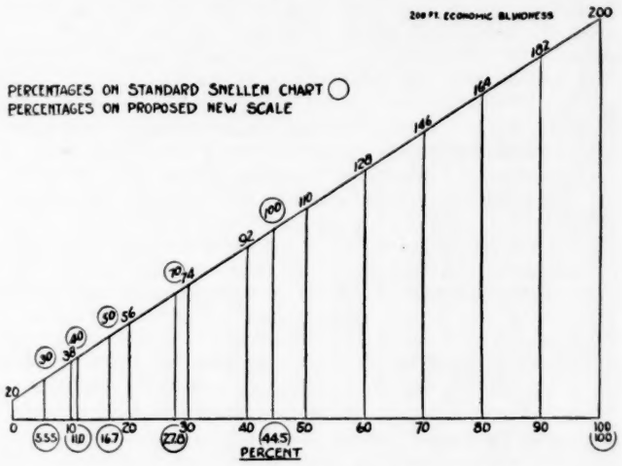

Chart 2.—Percentages of visual losses as given on the Snellen card as compared with the proposed test chart, the latter showing decimal gradation.

terms used in indicating visual acuity are not actual fractions. As I have shown elsewhere, the difficulty lies in the attempt to divide a physical function into fractional parts. It is a law of physics that in order that the proportionate parts of a thing may be determined, the thing must itself be complete. There is no complete range of vision. It extends from the eye of the observer to infinity. It has one end in the mind of the observer, the other in the object seen, whatever may be its distance. One may, however, predicate a condition in which sight may be measured between definite limits. Any two points may be assumed in the entire visual range as those between which these measurements may be taken. Let the first be at a distance of 20 feet from the observer, with the object giving a visual angle of 5 minutes, and the other at a distance of 200 feet, which gives the same angle. Now if the object which should be seen at 200 feet can be seen only at 20, there is an angle of 55 minutes. It may then be said that between normal vision or that seen at 20 feet and that which would require an angle of 55 minutes at 200 feet, which in many courts is taken as that of economic blindness, there are two limits to the scale. This gives two ends from which to measure the gradations of visual losses.

If, then, a 5 minute angle or that made by correctly formed test objects at 20 feet indicates normal vision, that at 100 feet or 200 feet or 220 feet or at whatever point may be determined on as the limit beyond which further loss cannot be economically sustained, there are two ends of a scale which is subject to as many divisions as one may care to make. If the visual angle is considered as an arc of a circle, any greater angle than that of 5 minutes can be proportionately measured on the arc and the proportion definitely recorded. It would make no difference whether the test object was measured in English feet or in meters so long as the

* Read before the Section on Ophthalmology at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 11, 1929.

5 minute angle was maintained at the specified distance. To record the visual test, therefore, in visual angles rather than in accordance with the Snellen formula would be simple and scientific and would take from it the confusion that now exists. Our present test letters or symbols do not readily lend themselves to any degree of regularity in proportionate values. They are exceedingly inconvenient in determining relative percentages. When the first four lines of the usual chart are taken, the proportionate differences are relatively close. The average is about 5 per cent. Between the fifty case letters and the seventy case letters is a difference of 9 per cent, while between the seventy and 100 case letters there is a difference of more than 59.5 per cent.

While it is true that the differences between the larger letters are less consequential than between the smaller ones, a single line may be sufficient to disqualify a claimant from receiving the full indemnity for economic blindness to which he is entitled, or it may give him a much greater sum than that which he should justly receive. It will be necessary, therefore, if the system of recording visual acuity in 5 minute angles is adopted, that there be constructed a test chart for letters differing in size from those ordinarily employed. The accompanying table will make this apparent.

*Standard Snellen Chart Letters and Proposed Letters**

Standard Snellen Chart Letters		Proposed Letters	
Distance of Letters	Percentage of Visual Loss	Distance of Letters	Percentage of Visual Loss
20	0	20	0
30	5.55	29	5
40	11.1	38	10
50	16.7	47	15
70	27.8	56	20
100	44.5	74	30
200	100	92	40
		110	50
		128	60
		146	70
		164	80
		182	90
		200	100

* If letters are made to be read at the distances indicated on the proposed chart rather than those on the Snellen chart, the results may be read in decimal percentages.

It would seem, however, that a test chart could be constructed with great readiness which would give values in a regularly progressive percentage series. In the table shown the first column would represent the usual size of the Snellen letters with the irregular percentages; the second would represent an irregular size of the letters with exact percentages.

While the percentage values are the same, it will be evident that the percentages in the first column are awkwardly fractioned and unevenly arranged. In the proposed list the letters are unevenly arranged but with exact decimal percentages. In both instances the size of the letters is near enough to give an exact and scientific basis of record. The distance at which the proposed letters should be read in order that they may give a 5 minute angle is as shown, and the percentages in the proposed chart are based on the following equation: $\frac{(C-20)}{180} \times 100$ equals percentage of visual loss.

Now if the arc represents a loss of 50 minutes greater than the 5 minute angle of normal sight, the readiness with which this may be divided into ten or if necessary twenty parts is apparent (chart 1).

In its practical application a 5 minute difference is sufficient except for the first four lines. The range between letters which should be seen at 20 and 36 feet is too great, as is that between 36 and 56. This is met by using the 2.5 minute angle instead of the 5 and thereby giving intervening letters for 29 and 47, which makes a scale of test objects giving intervals of 2.5 minute angles for the first four and 5 minute angles for the remainder of the series.

The mere reading of the letters then gives at once the percentage of losses, so that no calculations are necessary. It will be found that this is more simple, less confusing, and fully as scientific as the system of notation now employed.

ABSTRACT OF DISCUSSION

DR. WILLIAM H. CRISP, Denver: Industrial efficiency is not exactly proportional to the Snellen fractions of visual acuity, for, as has been often pointed out, the psychology of the individual may render him more efficient with 50 per cent visual acuity than another man who has full visual acuity; and many occupations may be carried on almost as well with 50 as with 100 per cent of visual acuity. There is no complete agreement as to the exact fraction of visual acuity at which the vision, from an industrial standpoint, is to be regarded as entirely lost.

But it cannot be emphasized too strongly that all modifications of the Snellen basis of expressing visual acuity for compensation purposes are arbitrary; that none of them can be entirely logical, and that none of them can be uniformly fair and equitable for all individuals concerned and under all circumstances.

The scale proposed by Dr. Lewis makes an interesting diagram, but it is open to criticism from several important angles. The visual acuity ratio between 20/20 and 20/200 does not correspond to the ratio between angles of 5 and 55 minutes but to the ratio between angles of 5 and 50 minutes, or exactly the ratio that is expressed when we say that the patient with 20/200 visual acuity has 10 per cent of normal visual acuity. Thus, while a patient with 20/200 vision is shown as requiring a 55 minute angle for the test letter, he actually requires a 50 minute angle.

Because the patient with 20/200 visual acuity still has one tenth of normal vision, as calculated by Snellen, while the patient with 20/20 has full vision according to Snellen, Dr. Lewis divides the distance from 20 to 200 feet into ten steps of 18 feet each, although the actual mathematical relationship involved is between the fractions produced by placing the distance of 20 feet as numerator on these other distances as denominators. The expression of the visual acuity on the basis of the intermediate distances thus obtained in Dr. Lewis' table would be unnecessarily clumsy, especially for the general physician, in whose hand much of the original work of reporting on compensation cases must rest. The basis of the apparently uniform gradations of Dr. Lewis' scale is arbitrary and has no direct mathematical relationship to the Snellen scale.

My own impression is that it is best to construct a simple scale, more or less like the Colorado scale, showing in one column the visual acuity according to Snellen and in the opposite column the corresponding percentage allowed to the claimant.

DR. F. PARK LEWIS, Buffalo: Dr. Crisp seems to have overlooked the one point in my paper which I felt was important and which I had hoped to make clear. He has discussed the Colorado method of determining estimated visual losses when indemnity is sought. With this my paper had nothing whatever to do. I was proposing merely the desirability of substituting as a record of visual acuity the simple and accurate 5 minute angle in place of the seemingly fractional system which now is used. The Snellen method was wholly satisfactory at the time it was devised but with a multiplicity of test types, some based on the foot and some on the metric system, a degree of confusion results in consequence.

As I have pointed out the letters on the ordinary chart give irregular percentages; it therefore becomes necessary, if we wish the percentages decimated, to change the size of the letters which we use while retaining the 5 minute angle. This has already been done in the chart approved by the American Medical Association, which gives results closely approximating my own. It differs only in the adoption of an 80 per cent loss as equivalent to economic blindness. The results, however, are

not the important point because the determined visual loss rests not with the ophthalmologist but with the court. That which the ophthalmologist is expected to give is the visual acuity present and the percentage of sight remaining.

The chart commonly employed giving 20, 30, 40, 50, 70, 100 and 200 distances gives irregular percentages. This is immaterial and may easily be rectified if the visual angle is taken as the basis of a 5 minute angle at the distances given in the accompanying table. It will be seen how irregular the measurements are in both feet and meters as these percentages are to be obtained.

Foot	Meter	Percentages
20.0	5.1	100
25.7	7.8	95
32.1	9.8	90
38.4	11.7	85
44.9	13.7	80
52.1	15.9	75
60.2	18.4	70
68.2	20.8	65
77.5	23.6	60
86.8	26.5	55
97.5, etc.	29.7, etc.	50, etc.

It would be far simpler to say that the distances as shown in the table which I have presented should be recorded not as 20/20 but as 5 minutes; that is, not V = 20/20 but V = 5, 10, 15 or 50 minutes as the case may be. To this might be added a notation that it was made at 20 feet, 25.7 feet to 97.5 feet, and would read V = 5 minutes (20 feet); V = 50 minutes (20 feet). Such notations would at once simplify our records and would prevent confusion and eliminate permanently the idea that we are dealing in fractions representing the totality of visual acuity.

MASTOIDITIS-ACTINOMYCOSIS *

DANA W. DRURY, M.D.
BOSTON

The inflammatory processes which attack the mucous and periosteal lining of the mastoid cells are seldom primary; they generally occur from the extension of an inflammation in the tympanic cavity. An inflammation of the mastoid process is seldom secondary to diseases of the external auditory canal. Traumatic mastoiditis is among the rarest lesions. In short, the mastoid process seems to be immune to acute disease except as a result of infection from a diseased tympanum.

Historically, the subject matter of this paper is of interest in that the name streptothrix is probably invalid as a generic designation among the bacteria. Many authors, however, have used streptothrix (Corda) in place of actinomyces (Hartz). The action of the infection on the body, clinically, is practically the same in two cases.

In 1890, Ginsberg [1] reported the case of a business man, aged 30, admitted to a hospital, scarcely able to speak. Trismus was present with swelling in the left cervical region. The skin over the lower part of the mandible was red. There were scars, fistulas and swelling over the left parotid region, with obliteration of the nasolabial fold. The facial nerve could not control the muscles but its upper part was intact. Pus from the fistulas contained *Actinomyces* demonstrated microscopically. Slight amelioration was shown in five days and the patient was able to give a history of pain in the left ear beginning in March, followed by discharge. The cervical and facial swelling began in April and was incised by a physician. It then abated but reappeared; about the first of September, violent pain began on the left side of the head, with dilated pupils and papillary edema. The facial paralysis persisted; the patient failed rapidly and died, September 7. Autopsy showed fungi in the tonsils, ear and left mastoid as well as in the temporal bone of the left side.

Majocchi,[2] in 1892, reported the case of a man aged 48, who was admitted to the clinic with a diagnosis of mycosis fungoides. In three months he showed marked amelioration, but wished to leave and was released on the promise to return. A month later he was readmitted with a history of marked headache, worse on the right side. Large nasal polypi were removed. Three days later the patient showed inflammation of the right eye with slight ectropion; the right corner of the mouth dropped, allowing saliva to escape. The tongue protruded to the left. Three days following the readmission, pus appeared in the canal of the right ear; the drum was reddened and perforated. The patient was confined to bed with vertigo and vomiting. On the seventeenth day he died. The autopsy showed the right ear and mastoid involved, basilar meningitis and thrombosis of the transverse sinus. There was caries of the petrous portion of the temporal bone. *Actinomyces* was found in the pus in the deeper portions of the head.

Poncet,[3] in 1893-1894, reported two cases, one of a woman farmer who gave a history of having been kicked on the face by a cow and of a tumor arising in the parotid region. Fistulas discharged into the external ear for a long time, the woman dying from pulmonary disease in less than a year. The second case was that of a man, aged 54, who was accustomed to chew bits of straw. He developed an actinomycotic tumor in the parotid region besides alveolar-dental periostitis and gingival abscesses discharging the fungi. Later there was a discharge from the ear also and the fungi were recovered from sixteen areas. From the same clinic L. Dor [4] reported the case of a man, aged 48, admitted with a left cervical tumor with trismus of about a month's duration. The extraction of an upper left wisdom tooth was followed by a buccal infection, and two months later by an abscess which opened into the mouth spontaneously, yielding fungi in the pus. At about the same time he noticed a discharge from the left ear with tenderness in the left mastoid region. Below the left ear was a warm and painful swelling extending forward to the parotid region and to the face. The areas affected were opened repeatedly, and each time actinomycotic figures were obtained.

Little-Dale,[5] in 1901, reported the case of a farmer aged 36, who complained of disease of the ear and the left cervical region. The condition began toward the end of February (the patient was first seen in April) with violent pains in the ear. Fifteen days later, pus began to flow and there was relief from pain. March 1, pain and swelling were noticed in the left mastoid region. The swelling extended down the sternomastoid muscle, with torticollis developing. Small superficial absesses appeared which opened to form fistulas. The skin was adherent here to the deep fascia; in places it was like onion skin. The fistulas oozed a serosanguineous fluid. There was a discharge of a purulent nature from the ear with decreased hearing acuity. This situation continued for six months, or until the

* Contributions from the Evans Memorial, number 202.
* Read before the Section on Laryngology, Otology and Rhinology at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 12, 1929.

1. Ginsberg: Inaug. diss., Berlin, 1890.
2. Majocchi, D.: Riforma med. **120**: 532, 1892.
3. Poncet: Thèse de Lyon.
4. Dor, L.: Gaz. hebd. de méd., 1893.
5. Little-Dale: Brit. M. J., 1901.

patient was lost sight of in October. The diagnosis was confirmed by microscopic examination.

The same year, Poncet [6] reported the case of a man, aged 23, who had a swelling on the back of his neck which forced him to keep his head bent. The swelling was of four months' duration; it had appeared at first as a small button on the rim of the ear, extending over the mastoid region. In three weeks it was the size of an orange and very painful. The swelling then reached the other ear across the neck and extended down to the bottom of the scapula. The patient died from direct extension to the lungs, autopsy showing yellow granules with actinomycotic bodies in the neck, lungs and ears.

In 1903, Rivière and Thévenot [7] reported a case in a tailor, aged 64, who was admitted to the clinic. There was a scar on the left check, an indurated nodule on the left lip, and a red fistulous swelling beneath the orbit and in the parotid region. The left ear discharged pus intermittently. The meatus was closed by a swelling which approximated the anterior and posterior walls. The superior branch of the facial nerve was paralyzed. Incision beneath the left orbit revealed pockets of yellow granules. The discharge from the ear showed the same sort of granules as did the mastoid on being opened and in the process of healing. The patient was lost sight of before healing had completely taken place.

Pechon,[8] in 1906, and Pinaroli,[9] in 1910, reported short cases of the ear that were cured; in both cases, *Actinomyces* was found in the discharge from the ears. At about this time J. C. Beck [10] described a case in Zaufal's clinic, that of a farmer aged 54, who eventually died from the infection. Autopsy revealed *Actinomyces* of the middle ear with propagation into neighboring structures, the soft parts as well as the bone at the base of the skull, including the basilar artery, and arteritis with final rupture and fatal hemorrhage.

New,[11] in 1922, reported three cases seen in the Mayo Clinic since 1919. He stated that during the previous eleven years, 127 patients with actinomycosis were examined in that clinic. He observed that it was more commonly found in farmers or in persons whose rural life exposes them to infection, but that it could not be said to be occupational. The prognosis varied with the stage of the process and the clinical picture at the time of the patient's examination. He recommended free incision, large doses of potassium iodide, radium, tincture of iodine into the wound, and iodoform packings as necessary.

REPORT OF CASE

The case [12] that has interested me especially and one that I report at length is that of an Irish woman, aged 35, who was admitted to the hospital in July, 1928, coming under my direct care, August 1. She complained of deafness and infection about the left ear. The past and family histories were uninformative. The patient was married, had three children living, and had had one miscarriage. About eight months before her admission she had a few infected teeth on the left side of the upper jaw treated with injections by her dentist. Four days following treatment she could not open her mouth, a condition which persisted with slight amelioration to the end. The area about the left ear also became swollen and tender, and a month after the appearance of this symptom a local physician opened an "abscess" below the ear. A month later, another physician opened an abscess in front of the ear, and the following month another physician opened an abscess above the ear. Four months before admission, the patient noticed slight deafness in the left ear and a loud buzzing. These symptoms had never appreciably abated. A month prior to admission, pain and headache over the left frontoparietal region developed and the patient "knew she was getting another abscess." Two weeks before admission there was considerable swelling and tenderness behind the left ear, and another abscess was opened by a physician, with drainage of much pus as before. The day before admission the patient noticed slight dizziness on rising after lying down for a rest, and during the night she had a "fever" and sweats preceded by a regular chill during which she felt "shivery" although she did not "shake all over." At no time was there earache, discharge, nausea or vomiting.

On admission, the temperature was 99 F., the pulse 80 and the respiration 20. Local examination showed some difficulty in opening the mouth, chronic diseased, injected tonsils, some palpable left cervical glands, injected nasal mucosa and a normal right ear. The left ear showed a thickening membrane. The line of the malleolus was seen; there was no discharge. A healed scar lay in front of the tragus, another below the lobule of the ear. There was a healing scar just above the ear which yielded a serous exudate. There was an open postaural wound with a mucopurulent discharge. There was no tenderness in the mastoid region but a definite thickening of the periosteum. The neck seemed stiff, the patient persisting in holding it to the left. The heart and lungs were considered safe for anesthesia. The leukocyte count was 13,400. A smear from the postaural wound yielded gram-positive diplococci. The urine showed albumin, sugar and epithelium.

At a surgical consultation, July 18, a thorough drainage of the left mastoid was advised; this was done. After the usual incision, the soft tissues under the previous small incision were found to be necrotic. The cortex on removal revealed pus coming from the tip. The cells along the posterior wall of the canal were cleared of pus and granulations. The antrum was enlarged. Large cells in the posterior superior portion were cleared of granulations. The sinus plate was uncovered and proved to be normal in appearance. The sinus ran far anteriorly; behind it were soft cells filled with granulations. The tip cells were curetted, yielding much pus and granulations. A very large tip cell far down in the mastoid was cleaned. No dura was exposed. An iodoform pack was used. The drum was incised. The patient was put to bed in good condition.

Until July 29 there was little change in the condition beyond a slight rise of temperature directly after the operation. On this day the patient complained of having had a slight headache the previous night. She was seen by the oral consultant, who advised no special treatment for the stiffness of the jaw at this time. August 2, she complained of stiffness in the muscles of the neck. August 7, a neurologic examination was negative. August 10, the mastoid was reopened under procaine hydrochloride anesthesia. August 13, little relief was experienced and an increased soreness about the old scar was noted. There was much induration below the tip of the mastoid.

August 15, the mastoid cavity was explored, the incision exposing the cavity and tip. The lower half of the cavity was cleaned of granulations and the tip removed entirely; in fact, most of the remaining mastoid bone was removed as far forward as the facial canal. Several small diploetic cells which were quite soft were found posterior to and at the bulb of the jugular vein. The vein was exposed over a sizeable area and appeared to be healthy. The cavity was thoroughly swabbed with mercurochrome and the wound was left wide open except for an iodoform wick. Repeated smears did not disclose the real infection. Warm, moist boric packs were applied constantly. Three days later there was greater freedom of the head but some temporal headache.

August 20, the patient stated that she felt a decided improvement in her general condition. The neck was still sore and there were shooting pains through the head day and night. The induration of the neck below the mastoid seemed more localized at the tip. The skin began to feel to the touch like "onion skin." August 24, an alpine lamp was recommended by the surgical consultant for the induration of the neck. August 31, the induration was apparently subsiding, but the next day it seemed to be fluctuant posteriorly. August 28, 550 cc. of blood

6. Poncet, Mercred: Médecine, 1902.
7. Rivière and Thévenot: Rev. de chir., 1903.
8. Pechon, G.: Bull. laryng. otol. et rhin. **60**: 108, 1906.
9. Pinaroli, G.: Arch. ital. di otol. rhin. e laryng. **21**: 441, 1910.
10. Beck, J. C.: Ann. Otol. Rhin. & Laryng. **15**: 103, 1906.
11. New, G. B., and Figi, F. A.: Am. J. M. Sc. **163**: 507 (April) 1922.
12. In my 1928 service at the Massachusetts Eye and Ear Infirmary.

was given by transfusion, with a rise in red cells from 3,024,000 to 4,288,000 and in hemoglobin from 70 to 85 per cent.

September 1, a half-inch incision was made over the point of fluctuation in the neck posteriorly and two drops of pus obtained which showed still only gram-positive diplococci. A mass of indurated glands was palpated. While there was a little improvement, it was noted, September 5, that there was some soreness over the right occipital region, with swelling and semifluctuation at the center of the neck. The swelling under the ear was enlarging and extending more interiorly. September 13, a 6-inch incision was made vertically behind the mastoid and extending to just below the mastoid tip. Through-and-through drainage with the deep mastoid wound was established and rubber tubes were inserted. Surgical solution of chlorinated soda was tried, as well as mercurochrome washings.

September 15 there was a sudden, sharp pain in the left side of the chest with increased resonance, decreased voice sounds and fremitus. The question of pneumothorax was raised, the medical consultant suggesting symptomatic treatment. Blood cultures and the Hinton test gave negative results. The next day the general condition was much worse. The patient was drowsy, incoherent and slow in response. September 18 she complained of soreness of the top of the head. Consultation as to the eyes revealed normal fields and fundi. September 24 a definite mental improvement was noted.

September 27, *Streptothrix* was definitely obtained for the first time from several of the small yellow points that had first been seen two days previously. Two days later a medical consultation revealed no active lesion of the chest. The next day the patient was allowed to be up and about, the mental and physical condition having markedly improved. She was given potassium iodide by mouth and the dressings were soaked in sterile potassium iodide solution. The warm boric packs were continued as an outside dressing.

October 2, a neurologic consultation was requested, as paresis of the left sixth nerve had been noted the day before. On this morning there was certain weakness of the right side of the body, with very active knee jerks, absent abdominal reflexes, 2 diopters choking in the left disk and a blurred margin in the right disk, also left homonymous hemianopia. The spinal fluid gave an initial pressure of 350; it was clear, contained 45 cells with 66 per cent lymphocytes, and showed no organisms on smear. A roentgenogram showed a patch of consolidation at the base of the left lung. The neurologic consultant could not confirm at the time a diagnosis of left occipital abscess involving the calcarine fissure.

October 7, examination of the ear showed the left drum normal. There was creamy discharge from the lower pole of the larger wound, while the tissue was filled with discrete, yellow, fine granules about 5 mm. in diameter. There was less drainage from the small posterior wound. The induration posterior to the larger wound was subsiding. The right drum was gray and bulged posteriorly and peripherally, with vascular injection. The drum was incised; an outpouring of serum relieved the patient of localizing pain in the ear. The patient appeared depressed most of the time and was often irrational. The next day the eyes showed the right disk blurred, the left swollen 2 diopters, with several small hemorrhages and lines of exudate. The vessels were overfilled and tortuous. There was right homonymous hemianopia. A lumbar puncture on this day showed an initial pressure of 350; on jugular compression the readings on the right side were 560/285 and on the left side 470/310; the cells numbered 67, with 66 per cent lymphocytes. The chest showed cogwheel breathing in the left axilla, and diminished tactile fremitus at the base of the left lung. The neurologic examination showed some weakness of the right arm, hand and leg. The paresis of the left sixth nerve was persistent. Abdominal reflexes were absent. The finger-to-finger and the finger-to-nose tests were very poor. For the first time, the secretion from the right ear was pus, which showed no organisms on smear but yielded small gram-positive bacilli on culture.

October 9, the mouth could be opened only 5 mm. No pharyngeal inflammation was actually seen, although it was felt that there must be some obstruction present. The ankylosis was partially ascribed to muscular spasm from the lesion extending to the pterygoid region. The following day the patient was incontinent and drowsy—distinctly worse. October 12, a note was made to the effect that the patient had cervical actimomycosis with probable extension into the left occipital lobe of the brain, probably by way of the longitudinal sinus. A roentgenogram showed a marked retropharyngeal swelling, and a lateral pharyngotomy as well as a cerebral decompression was suggested but the family refused further operative procedures. The lumbar puncture showed an initial pressure of 350; there were 45 cells and 66 per cent lymphocytes. Total protein was 62 and chlorides 786. The right disk was blurred, the left still showing 2 diopters choking. Right homonymous hemianopia persisted.

October 13, the patient was stuporous to comatose. The incontinence persisted. At 3 p. m. there was a respiratory difficulty, the patient becoming cyanotic. Her condition improved with the administration of caffeine and artificial respiration. The pulse rate was 128. A half hour later, respiratory difficulty recurred but cleared shortly with the application of heat and blankets. A nasal tube was removed at the first sign of respiratory distress. With a third failure of breathing the patient failed to rally and, in spite of all measures, she died late in the afternoon.[13]

COMMENT

During the illness, the temperature varied little, running from 98.6 to 102 F. and usually remaining in the vicinity of 100 F. Shortly after the admission of the patient it rose to 103 F. The pulse varied correspondingly. The frequent leukocyte counts ranged from 9,800 to 16,000 with no abnormalities in the differential count. Repeated blood cultures were all negative. An autogenous vaccine was tried, the patient receiving several doses during September. The alpine lamp was used several times with little or no noticeable effect during the month of September.

The early deafness during the involvement of the ear showed the Weber test localized to the left side, the raising of the low limit to 256 double vibrations, with a normal high limit and a marked depression in the whisper and voice tests. This is characteristic of obstruction of the middle ear. There was practically no change during the illness. When the right ear became involved it acted like an ordinary infective process and a gram-positive diplococcus was obtained.

The importance of the size of each single cell in the absorption of the pus becomes evident if one remembers that the surface of a ball increases in proportion to the square of its diameter, while its contents increase as the cube. The power of absorption of the walls decreases, therefore, with the increase in the size of the cell. The smaller the single cells are, the easier they will master the pus they contain, and the number of cells that are inflamed is immaterial. One can at times dissect out the tip of the mastoid and leave a sort of fascia or membrane of the attachment of the sternomastoid muscle. In that case the tendon is not exposed to infection. Often hidden cells in the diagastric area or paramastoid cells will come into view in this method.

Sections of typical actinomycosis stained in hematoxylin and eosin after fixation in solution of formaldehyde show the central portions of the granules stained diffusely in hematoxylin while the peripheries, including the clubs, are stained in eosin. The difficulty in diagnosis, however, seems to lie in the fact that under different conditions the same organisms may assume different characteristics not only morphologically but also in staining reactions. In fact, there seems to be no sharp distinction between these organisms and the bacteria. A characteristic of *Actinomyces* is that it

13. This case was taken over by the district medical examiner for autopsy.

produces abscesses and consists of filaments which form granules with peripheral clubs, not delicate in outline, gram-positive and branched.

Actinomycosis usually has its primary seat in the alveoli, but here it frequently passes unrecognized, and the first manifestation is the ulceration on the cheek or neck. The diagnosis, therefore, is wholly dependent on a microscopic recognition of the fungus. Actinomycosis and other rare forms of infection produce abscess-like formations in the brain but they are of little clinical value in themselves.

Again, the case cited, because of the difficulty in controlling the infection in spite of all known avenues of approach, illustrates clearly the three stages of brain abscess and its terminal outcome. A stage of excitement and suffering is followed by a stage of depression and fever, absence of chills, slow pulse, with or without the symptoms of increased intracranial pressure, and absence of optic neuritis with hyperleukocytosis. Then the symptoms localize the abscess in some particular portion of the brain consistent with its origin. Localizing symptoms are only occasionally found in cerebral abscess because the majority of these abscesses are situated outside the motor area.

SUMMARY

1. This was a probable case of actinomycosis bovis.
2. The diagnosis is based on the chronicity of action and the fact that such infections end in death.
3. There was difficulty in finding the true organisms.
4. These cases show marked tolerance to high doses of iodides.

416 Marlboro Street.

ABSTRACT OF DISCUSSION

DR. AUSTIN A. HAYDEN, Chicago: I once saw a case which I thought was actinomycosis but which proved to be otherwise. A woman, aged 46, a school teacher, had a chronic inflammation of the antrum. A Caldwell-Luc operation was done. A moderate degree of swelling of the cheek resulted, but this swelling did not clear up for about two months, during which time numerous fistulas were established in the inside of the mouth. The woman was feeling quite well with the exception of this swelling in her cheek. The blood count presented an unusual picture. She had a mild secondary anemia; the leukocytes numbered 6,500; the polymorphonuclear cells had disappeared almost completely; the small lymphocytes had increased to 83 per cent. Three weeks later the polymorphonuclears had increased to 10 per cent, with a reduction of the small lymphocytes. The pathologist thought the case was one of actinomycosis. Fortunately it proved to be otherwise, but what the cause of the swelling was I do not know. There was no bone necrosis discovered at the operation or afterward, and why the cheek swelled and stayed swollen is more than I know. Some specimens were lent me by the Bureau of Animal Industry of Chicago through its secretary, Dr. Enos L. Day, showing peritoneal actinomycosis in the steer, mammary gland actinomycosis in the cow, lung actinomycosis in the steer, and tongue actinomycosis in the steer. I looked over these specimens with Dr. Day and learned some interesting things. Actinomycosis seems to be a chronic disease, one that is always grafted on a chronic sore, and the grafting takes a considerable time. In animals it is usually primarily at the base of the tongue, in the teeth, or in the mammary gland, which is particularly dependent. The tonsils of the beef are the only parts that are discarded for meat purposes as a routine, because of the frequent presence of actinomycosis granules. In 840 cattle, 400 had sore tongues, and of these 139 had actinomycosis granules in the ulcerations on the tongue.

DR. A. T. WANAMAKER, Seattle: Almost all authorities agree that the prognosis for the localized type of actinomycosis is good, while for the systemic type it is poor. According to Karsner, the infection tends to produce a nodule containing round cells and gray-yellowish granules. The nodule becomes encapsulated and may heal by the formation of scar tissue. Blood vessels often become the seat of thrombosis. By this means the organisms are transmitted to neighboring organs, death being caused by invasion of organs or tissue necessary for life, or by secondary infection. It is doubtful whether it is carried through the lymph stream, as the granules are too large to enter the lymph vessels. Actinomycosis is rarely found in the kidney and urinary tract. It is likewise seldom found in the brain, more commonly in the appendix, colon and liver. In bone it produces a superficial rarefying osteitis and peripheral caries, with underlying granulation tissue. I have treated three cases of actinomycosis of the localized type, one of the tongue associated with carcinoma, one of the glands of the neck (so-called lumpy jaw), and one of the cutaneous and subcutaneous type in the cheek. Physicians in Seattle have reported to me cases involving the lung, kidney, appendix and brain, all ending fatally. There is some doubt as to the value of iodides. The aniline dyes, particularly methylthionine chloride (methylene blue), have been recommended.

DR. FREDERICK A. FIGI, Rochester, Minn.: Actinomycotic involvement of the mastoid is a rare condition. In a group of between 250 and 300 cases of actinomycosis of the head and neck seen at the Mayo Clinic I can recall only one instance in which we proved involvement of the mastoid. A man, aged 40, came with a sinus anterior to and just above the tip of the mastoid surrounded by a good deal of induration. No radical surgery was done. We instituted routine treatment which consisted of iodides to the point of tolerance internally, and irradiation—and I would emphasize the importance of irradiation, either radium or high voltage roentgen therapy. They are helpful in breaking down the granulomatous mass and helping to localize and prevent the extension of the process. In addition, hot compresses are used to take care of the acute inflammatory reaction. This patient did nicely and came back in the course of six weeks or two months; we were able to palpate the denuded bone through this sinus, and gentle curettement brought forth the styloid process, which had sequestrated. Actinomycosis with involvement of bone has been quite rare in our experience. The frequency with which actinomycosis follows dental procedures should also be emphasized. Quite commonly it develops following dental extraction, frequently following treatment for pyorrhea and various other inflammatory conditions about the mouth. We have seen it following tonsillectomy and other minor operative procedures in this region. Many times it comes much as an acute phlegmon would develop. That is contrary to the teaching of most textbooks, yet we have encountered it developed to the point of suppuration in ten days. More frequently it develops as an insidious, low-grade inflammatory process, the most commonly present early symptom of which is a slight ankylosis varying markedly in degree. As to the complications, in our one case of head and neck actinomycosis there was no intracranial extension, no intrathoracic extension. Intracranial extension carries with it 100 per cent mortality, as a rule. I recall one case of primary actinomycosis of the nasopharynx that showed definite evidence of intracranial extension, with recovery.

DR. W. L. BURNAP, Fergus Falls, Minn.: I had one case with extension from the cheek and cervical glands to the lungs. The involvement was extensive on the face and in both lungs. The general condition was extremely bad, warranting an absolutely bad prognosis. Much to my surprise, under large doses of potassium iodide and roentgen therapy, in the course of months be recovered completely and has remained well for about three years. Some do not realize what large doses of potassium iodide are necessary and how well it is tolerated. This man took from 60 to 90 grains (4 to 6 Gm.) three times daily for months. The diagnosis in this case was confirmed by several competent men, so would seem to support the general impression that potassium iodide and the x-rays are extremely valuable therapeutic agents in this disease and when properly administered will occasionally accomplish almost the miraculous.

DR. DANA W. DRURY, Boston: I am not at liberty to speak of the autopsy that was held at this time. Fourteen cases taken from the literature, involving the ears principally, were cited

in the paper. One of the points of interest is the large doses of potassium iodide that may be taken in this infection. This patient received as high as 90 grains (6 Gm.) three times a day by mouth, enema and in the local dressings, over a short period.

SEPTIC SORE THROAT *

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CHICAGO

From time to time, epidemics of septic sore throat appear. In England, for fifty years, occasional outbreaks, evidently related in a causal way to the milk supply have been reported. In this country, beginning in 1911 with the Boston epidemic, outbreaks were first recognized.[1] For a few years it was uncertain how frequent they were, since the disease then presented itself as a new problem. At that time, too, the question was freely discussed as to whether it was a disease easily controlled or one that might become increasingly prevalent.

Since that time, or approximately during the last fifteen years, only a few outbreaks have appeared. It is felt, therefore, that such epidemics are and probably always have been rare and that so far as can be determined from past experience there is no reason to think that in the future such outbreaks will be more numerous than in the past.

But in many ways the problem remains as it was twenty years ago. The disease threatens about as it did then. One may expect here and there in communities throughout the country outbreaks involving a few score to a few hundred cases with a definite though low mortality (from 3 to 5 per cent or less).

Efficient pasteurization and careful supervision of certified dairy products no doubt will tend to reduce the danger of outbreaks. However, control of milk supplies throughout the country has hardly reached that stage that would warrant thinking of the disease as unworthy of serious consideration.

The extensive epidemic in Chicago during 1911-1912 clearly indicated that such epidemics may appear on a grand scale and involve several thousand persons in a short period of time. The problem in a large city becomes extremely serious for the reason that large companies exist which furnish milk to thousands. Because of complex methods of distribution, when such an outbreak occurs it is not as simple in a large city as in a small community to analyze and trace to its source any given infection.

It was during the study of this epidemic that certain facts indicated that possibly the cows harboring *Streptococcus epidemicus* may have been infected from a human source through injured or abraded teats in the process of milking. To test this point further, Capps and I [2] conducted direct experiments on cows by abrading the teats and implanting *Streptococcus epidemicus* on them with the result that in a short time the udder became infected with the same streptococci and remained so for a long time. This infection might occur with little or no gross physical change in the involved udder. These results were later confirmed by Mathers,[3] also by direct experimentation on the cow. These experiments were the first made directly on the cow to test the validity of the assumption that milk-borne epidemics of sore throat were due to organisms of a definite type transplanted from human beings to the cow's udder, where they might multiply for a long period and from which they could be carried in the milk to the consumers.

RECENT EPIDEMICS

Since the presentation of this subject in the papers referred to, several contributions of special interest have been published, all of which support the idea that *Streptococcus epidemicus* is the specific cause of the disease and that it probably entered and infected the udder from a milker. Benson and Sears [4] reported a clear-cut epidemic in Portland, Ore., in 1923, involving 487 cases with a mortality of 4.5 per cent. This was traced to one dairy delivering raw milk and rated as one of the best in the city. The outbreak was explosive in character and conformed in every detail to the typical milk epidemic of septic sore throat as commonly described. The incidence of peritonitis, as a complication, was high (ten cases) and erysipelas was especially common (twenty cases). Contact transmission, as is usual in this disease, was not frequently observed. Similar strains of hemolytic streptococci were obtained from the udder of one of the cows and from the inflamed throat of one of the milkers, from whom in all probability the cow's udder became infected. These strains were similar to strains from the infected persons and were apparently identical with streptococci isolated from other epidemics. The infected udder revealed a massive mastitis easily recognizable. The fact that nearly all the patients were using milk from one dairy was early recognized by the authorities. The milk of this dairy was ordered to be heated at once and within twenty-four hours the incidence of the disease rapidly declined and soon disappeared. After careful investigation of the herd under suspicion, the infected cow was detected and later shot. Autopsy revealed the heavily inflamed udder. It was the opinion of Benson and Sears that the infection originated in the throat of the milker and secondarily infected the udder of the cow, from which the streptococci were disseminated through the milk to the consumers.

In April, 1926, Frost and Carr [5] studied an interesting epidemic which was traced to infected cows in one of the best dairies in Madison, Wis. There were sixty-three cases in all. *Streptococcus epidemicus* (Davis), in typical form, was isolated from the infected milk of the cows, from the throat of the hired man who stripped the cows after the milking machine, and from the patients. It was encapsulated and hemolytic and had all the important characteristics of this organism. The cows harboring *Streptococcus epidemicus* were taken to the farm of the University of Wisconsin and kept under observation. It was observed that these organisms remained in the udder for long periods of time. Frost and Carr make the significant statement that such cows probably should never be returned to the herd for milking purposes again. They also stress in this paper the laboratory methods useful in the

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* From the Department of Pathology and Bacteriology, University of Illinois College of Medicine.

* Read before the Section on Pathology and Physiology at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 12, 1929.

1. Davis, D. J.: Septic Sore Throat, Oxford Medicine **5**: 1.
2. Davis and Capps: J. Infect. Dis. **15**: 135, 1914.
3. Mathers, G.: J. Infect. Dis. **19**: 222 (Aug.) 1916.
4. Benson, R. L., and Sears, H. J.: Milk-Borne Epidemic of Septic Sore Throat in Portland, Oregon, J. A. M. A. **80**: 1608-1612 (June 2) 1923.
5. Frost, W. D., and Carr, A. M.: Am. J. Pub. Health **17**: 139 (Feb.) 1927.

investigation of an outbreak of this disease and the procedures necessary for the identification of *Streptococcus epidemicus* and its differentiation from other streptococci.

Again, last year, an outbreak appeared in typical form at Lee, Mass. Several hundred cases were observed and the source of the infection was traced to a cow harboring the streptococcus. This organism had the characteristic properties of *Streptococcus epidemicus*. After the removal of the source of infection, the outbreak promptly subsided. The important features of this epidemic were demonstrated as an exhibit at the meeting of the American Public Health Association at Chicago last year.

The striking feature of all three epidemics referred to is their close similarity. So similar are they in origin, etiology, mode of transmission, symptomatology and termination of disease, not only to each other, but to the epidemics of septic sore throat reported in previous years by others, that one is more and more convinced that this disease is a definite entity, clinically and etiologically—as much so, for example, as scarlet fever, measles or diphtheria. Furthermore, in these epidemics the type of hemolytic streptococcus was carefully studied and conformed morphologically, culturally and pathogenically to *Streptococcus epidemicus*. In all epidemics, too, the most rational explanation of the origin was milk from an udder infected with organisms which entered it during the milking process from the hands of a human being suffering with sore throat.

STREPTOCOCCUS EPIDEMICUS

No doubt the most important confirmations of the etiologic relation of *Streptococcus epidemicus* to septic sore throat are the papers recently published by Brown, Frost and Shaw [6] and by Frost, Gumm and Thomas.[7] This work resulted from the activities of the Chicago Health Department in 1925. Dr. H. N. Bundesen, at that time commissioner of health, took up the problem of the possible pathogenic significance of hemolytic streptococci in raw certified milk.[8] Since much of the certified milk entering Chicago comes from certain farms in southern Wisconsin, the Medical Milk Commission of Chicago became interested and arranged for a thorough study of the problem in the dairy department of the University of Wisconsin. Here, an intensive study of *Streptococcus epidemicus* was made by Frost, Brown and their associates, and it is gratifying to note that this work is still being continued.

The problem has been studied both by investigating milk epidemics as they arise and by a thorough investigation of the types of hemolytic streptococci that occur in milk from certain certified dairy herds. Already reference has been made to the report of an epidemic of sixty-three cases of septic sore throat at Madison, Wis. Especial attention has been given by them to a technic to identify and differentiate various types of streptococci. Already their method has been recommended and adopted by the American Association of Medical Milk Commissions for the detection of *Streptococcus epidemicus* in milk and for the protection of consumers of certified milk. From their last report, among a thousand cows on five different certified farms, hemolytic streptococci were found in 28.6 per cent of the samples obtained from groups of ten cows. Usually the numbers were small. Of 394 cultures of true hemolytic streptococci, four strains proved to be *Streptococcus epidemicus* coming from as many cows. These cows were identified and placed under observation. Of interest is what was said concerning these cows: "Two of these four cows carried this infection for several months at least. The first one for about six months, the second one for at least four months. No attempt was made to study the third, but the fourth cleared up almost immediately. Because of the persistence of the infection in two of the cows, we advise the immediate and permanent removal of any and all cows showing infection with *Streptococcus epidemicus* from milk producing herds." It may be pointed out that these observations, so far as length of the period of infection in these cows is concerned, agree well with the experimental observations by Davis and Capps and by Mathers, already referred to.

Questions of interest in connection with these observations are: Whence did the infection come in the first place in these animals? How long had the infection already persisted? Are such cows permanent or transient carriers? Were these particular strains of *Streptococcus epidemicus* virulent for man? Are all strains of *Streptococcus epidemicus* virulent for both cows and man? Do epidemics of this infection occur in cows at times? These questions I think are pertinent, especially because this is the first time *Streptococcus epidemicus* has been found in cows or in milk apart from an outbreak of sore throat in human beings. Heretofore, the organism has always been detected first in man and then traced back to the cow. These questions are raised also for the reason that the data at hand do not answer them clearly and for the further reason that the answers would help materially in the prevention of this disease.

The matter of acquiring and losing capsules by bacteria is a subject much discussed in both the older and the more recent literature. Generally speaking, capsules are structures somewhat easily manipulated, especially those on certain bacteria. The discussion of this subject may easily become a quibble for the reason that some good observers maintain that many, perhaps all, bacteria have a small amount of capsular or capsula-like material about them. From a practical standpoint it may be said that by using standard methods it has been found by all observers that *Streptococcus epidemicus* is a definitely encapsulated coccus as it appears in the milk and various exudates of the cow and human beings. Since other varieties of pathogenic hemolytic streptococci do not possess capsules detectable under these conditions, the presence of this structure has been a striking feature of this organism and of great aid in its identification. In its behavior the capsule seems to be comparable in many ways to the pneumococcus capsule. In old cultures under artificial conditions it may not appear. Pilot and I have observed that other hemolytic streptococci, when passed through animals and cultivated on animal fluids, may acquire demonstrable capsular substances though not uniformly nor in amounts hardly comparable with that of *Streptococcus epidemicus*. Brown, Frost and Shaw [6] also state that they have been able to induce the formation of capsules in the laboratory, referring to strains of *Streptococcus pyogenes*.

The property of capsule formation is especially emphasized here for the reason that its detection is a

6. Brown, J. H.; Frost, W. D., and Shaw, M.: J. Infect. Dis. **38**: 381 (May) 1926.
7. Frost, W. D.; Gumm, M., and Thomas, R. C.: J. Infect. Dis. **40**: 698 (June) 1927.
8. Bundesen, H. N.: Control of Foods Eaten Raw, J. A. M. A. **85**: 1285 (Oct. 24) 1925.

simple and practical means of identifying *Streptococcus epidemicus*. But there are other features of this organism that are of importance in its determination and in a paper of this kind can only be referred to. I feel that this can best be done by quoting from the paper [6] just mentioned as follows:

> The strains of *Streptococcus epidemicus* form a homogeneous subgroup. They ferment glucose, lactose, saccharose and salicin but not mannite and are similar to *Streptococcus pyogenes* in all respects except that they possess a well defined capsule when observed in a moist india ink preparation. The possession of a capsule is often accompanied by a characteristic mucoid confluent or ameboid character of the young colony on fresh blood agar as distinguished from the round discrete colony of the nonencapsulated *Streptococcus pyogenes*. The name *Streptococcus epidemicus* was first used by Davis; the first adequate descriptions were given by Davis and Rosenow, and more completely by Davis. For our present purpose it makes little difference whether this form of streptococcus is regarded as a distinct species or as a variety of *Streptococcus pyogenes*. It may be that capsules may be acquired by *Streptococcus pyogenes* under favorable conditions (in fact we have been able to induce capsule formation in the laboratory), but if so these conditions appear to exist in connection with milk-borne epidemics of septic sore throat. Furthermore, the strains which we have kept from such epidemics have persisted in forming capsules throughout years of cultivation in the laboratory. This then is the type of streptococcus which should be sought for as the actual or potential cause of epidemics of septic sore throat—a streptococcus of round or slightly flattened elements, producing hemolyzed zones of the beta type in blood agar, rapidly hemolyzing blood corpuscles in fluid media, markedly pathogenic for mice, fermenting glucose, lactose, saccharose and salicin but not mannite, producing a final hydrogen ion concentration not above p_H 4.8 in glucose broth, failing to hydrolyze sodium hippurate, and probably always encapsulated when observed under suitable conditions, in the last respect differing from most strains of hemolytic streptococci isolated from sporadic human infections.

So far as the properties of this organism are known at the present time, the foregoing statement is complete for practical purposes.

STREPTOCOCCUS EPIDEMICUS TOXIN

At the time that *Streptococcus epidemicus* was first identified in 1912, nothing was known about the production of toxins by streptococci. The discovery by the Dicks of the scarlet fever streptococcus and its toxin and of a method for its standardization has at once opened up a new field for the study of all varieties of streptococci.

In connection with the early epidemics of septic sore throat it was noted that clinically certain patients not infrequently presented rashes and throats which simulated scarlet fever. Other cases presented skin lesions quite like erysipelas. For example, in the Portland epidemic, as already stated, erysipelas is given as a complication in twenty of 487 cases. Such data are significant as indicating that septic sore throat is one of a group of hemolytic streptococcus infections, the specific organisms being more or less closely related in some of their properties to those of scarlet fever and erysipelas. Experiments were therefore undertaken to determine whether or not *Streptococcus epidemicus* was a toxin producer and, if so, to compare it with other streptococci in this respect. These experiments were made by Dr. Isadore Pilot in our laboratory. They are of a preliminary nature and are being continued at the present time. The strains of streptococci used were as follows: Strain 40 was isolated by me in the Chicago epidemic of 1911-1912. This was one of the original strains on which studies were made at the time that the specificity of *Streptococcus epidemicus* was first recognized. Strain 29 was recently isolated in the Lee, Mass., epidemic of sore throat, from a cow suffering from mastitis. Strain 76 was isolated likewise during the Massachusetts epidemic from the blood of a person suffering with the disease. I am indebted for the two last-mentioned strains to Dr. E. S. Robinson, who sent them to me.

The results in brief may be stated as follows:

The method of producing toxins was similar to that employed in obtaining exotoxin with scarlet fever streptococci. Inoculated broth containing 1 per cent sterile defibrinated human blood was incubated for four days and then filtered through a Berkefeld filter. Skin reactions were obtained with the filtrates of all three strains (29, 76 and 40) in dilutions of 1:100, 1:500 and 1:1,000, 0.1 cc. being employed intradermally in the forearm. As with scarlet fever streptococcal filtrates, the reactions appeared within twenty-four hours, in the form of a zone of erythema from 15 to 30 mm. in diameter. Compared with the skin test unit of U. S. Hygienic Laboratories for scarlet fever streptococcus toxin, these toxins gave reactions of similar size in the dilution of 1:750. Heated toxin (60 C. for two hours) did not react.

Positive tests were obtained in 60 per cent of a group of thirty persons, *Streptococcus epidemicus* toxins being employed. On three of the same persons, who were negative with milk strains, skin reactions with scarlet fever toxin were observed. In three others, reactions were positive with milk strains and negative to the scarlet fever toxin. No experiments have as yet been made with an antitoxin.

It is of interest to note that strain 40, which was isolated about eighteen years ago, is still virulent and able to produce toxin in a way comparable with strains recently isolated from epidemics.

TRANSMISSION

Mention was made of the fact that, in many ways, epidemics of septic sore throat have points of resemblance to scarlet fever, bacteriologically and clinically. In the transmission of scarlet fever, milk-borne epidemics are a familiar fact, in which it has been assumed that the causal organism contaminates the milk from a human source, usually a milker or some person coming into intimate contact with the milk. Jones and Little [9] have reported a milk-borne epidemic of scarlet fever in New Jersey, the origin of which was scarlet fever streptococci found in the udder of a cow. Experimentally, this organism was highly virulent for a cow. If these observations are correct, the transmission of some of the milk-borne epidemics of scarlet fever may be accomplished in the same way as the transmission of septic sore throat and present all the problems inherent in the control of that disease.

In the discussion of the transmission of septic sore throat, one may well ask the question whether this infection is always transmitted by streptococci which have multiplied through incubation in the udder of the cow. In the past it has been common for writers to assume that such milk-borne epidemics are usually transmitted by streptococci entering the milk directly from the human carrier after it has left the cow. Evidently this assumption has been made simply because

9. Jones, F. S., and Little, R. B.: J. Exper. Med. **47**: 945 (June) 1928.

this has been the means by which other milk-borne infections, such as scarlet fever, diphtheria and typhoid fever, have been observed to be transmitted. As the more recent epidemics of septic sore throat are observed and studied, the evidence becomes more convincing that the usual route is by way of the udder. In all epidemics reported in which there has been an opportunity to examine bacteriologically the cows of the suspicious herd, one or more cows have been found with *Streptococcus epidemicus* in the udder. On the other hand, in none of the outbreaks has it been shown with any degree of conclusiveness that the streptococci entered the milk directly from a human carrier. One cannot deny the possibility of a direct human contamination, as in diphtheria and typhoid or possibly in scarlet fever, but this route has not as yet been convincingly demonstrated. One should realize what exquisitely favorable conditions exist for the multiplication of streptococci in the milk cisterns and ducts of the udder compared with the relatively unfavorable conditions that streptococci are apt to encounter when a few incidentally find their way from a human carrier into milk after it has left the cow or has been subjected to the safeguards and environment unfavorable for bacterial growth. *A priori,* the former mode of transmission would appear to be far more effective.

PREVENTION

The all important problem of prevention still remains, presenting serious difficulties to the producers and distributors of milk and to the public health officials. Like other so-called animal-human diseases, the difficulty lies in the detection of the animal carrier in time to prevent the dissemination of the dangerous organisms. The problem is not unlike that presented by undulant fever. Reference has been made to the American Association of Medical Milk Commissions, which has already adopted methods for the detection of *Streptococcus epidemicus* in milk products and has taken other measures to prevent or control the disease.

Based on past experience with the disease and from what is known at present concerning its bacteriology and mode of transmission, the following suggestions to protect the public most adequately from these epidemics may be reiterated: In the production of milk to be consumed in the raw state, that is, certified milk, the throats, hands or other parts of handlers of milk must be carefully examined for the epidemic streptococci. With present knowledge all persons suspected of carrying any variety of pathogenic hemolytic streptococci on their person should be excluded from contact with cows or their products. It may be pointed out that more data are needed on the incidence of *Streptococcus epidemicus* in human beings during nonepidemic periods. Sporadic cases of septic sore throat also need investigation both from a bacteriologic standpoint and from the point of view of their possible rôle as transmitters of streptococci to both cows and human beings. The teats require extra precautions. Lesions of all kinds should be treated and healed as quickly as possible. A bacteriologic plate test for streptococci may be made from sores. Streptococci grow or live in abrasions but soon die on smooth skin. This was shown in experiments made years ago. Examination of the udder may or may not reveal physical changes. This fact should be appreciated by every one, especially veterinarians. An examination of the udder, with negative results, may give one a feeling of false security which is dangerous.

Positive physical observations, of course, should exclude the animal from the herd. Curdling of the milk likewise may be misleading. It may or may not be indicative of infection with *Streptococcus epidemicus;* so too with the presence of blood in the milk.

Special emphasis should be given to teats and udders that are the seat of injury, scarring, stenotic ducts and similar conditions. They require special treatment, such as catheterization, which is often done without regard to asepsis or antisepsis and may result in infections. I once saw an apparently intelligent dairyman catheterize a teat of one of his best cows after inserting the tube in his mouth and blowing through it.

Dairymen and especially certified dairy interests should be alert in cooperating with health officers and the medical profession in the detection of early cases of sore throat among their customers. In the epidemic curve, at times, an early slight rise may appear followed by a drop before the main onset of the disease. This may be a sufficient clue to warrant an immediate investigation, and valuable time may be saved in instituting precautionary measures.

The real difficulty, of course, is the impracticability of examining bacteriologically, at daily or short intervals, the milk from each cow in the herd. The longer the intervals between such examinations, the greater the possibility of an udder becoming suddenly infected and issuing a shower of dangerous streptococci into the milk supplies. In general, it may be said that the more frequent the bacteriologic examination of the milk for streptococci, the less will be the danger of infection.

In the production of pasteurized milk, efficient heating by the holding process is sufficient to kill *Streptococcus epidemicus.* All workers are agreed that these organisms are not highly heat resistant. Heating at 60 C. for twenty minutes is sufficient to kill them. Modern pasteurizing plants have made this problem much simpler than formerly. Not many years ago, as is well known, much of the pasteurization was very inefficiently done.

The fact that these epidemics are relatively rare is one of the reasons why the solution of the problem will be difficult and slow. If they were more numerous, the issue would be forced. As is so often the case, no one is willing to press the matter until the disaster has occurred. The disasters in the form of these milk epidemics are few and far between and probably will continue to be so. Consequently, too many communities will continue in their routine way so far as milk control is concerned, regardless of the fact that an epidemic of septic sore throat occurred in Christiania in 1908, in Boston in 1911, in Chicago in 1912, in Portland in 1923, in Madison in 1926 and in Massachusetts in 1928.

SUMMARY

The present status of the epidemiology of septic sore throat is much the same as it was twenty years ago. Outbreaks are rare. They occur here and there and probably will continue to do so. No doubt, epidemics are now being observed that years ago would not have been recognized.

Modern methods of pasteurization and the careful supervision of certified milk products, together with new methods of identifying *Streptococcus epidemicus* should do, and possibly have already done, much to prevent epidemics. Much still remains to be done, however, in the control of milk supplies before the disease can be completely eradicated.

Streptococcus epidemicus seems to be the specific cause of the disease and is so regarded by those who have most carefully studied it. Studies of the more recent epidemics by various workers indicate that the usual if not the only route of transmission of the streptococci is from a human being to the teat and udder of a cow, through contact. Here they incubate and rapidly multiply. They then pass out in the milk directly to the throat of the consumer.

Strains of *Streptococcus epidemicus* yield a specific soluble toxin which varies to some degree from the toxin of the scarlet fever streptococcus.

ABSTRACT OF DISCUSSION

DR. ANNA W. WILLIAMS, New York: In our laboratory we are interested in this question of *Streptococcus epidemicus*, as well as the other cocci, and are studying the groupings. Unfortunately, we have not had any large series of strains of *Streptococcus epidemicus* to study. We recently received from Dr. Robinson three strains from the Massachusetts epidemic, and two toxins from Dr. Jones from the New Jersey epidemic. We tested the strains received from Dr. Robinson by agglutinin absorption. We found that one cow strain and a strain that came from one patient who died belonged by absorption to our larger scarlet fever group. The other one belonged to none of the type strains of serums that we had. All three strains produced toxins which were neutralized in the few children that we tested by our serum, produced by our scarlet fever strain 2-2. The toxins from the New Jersey epidemic were also neutralized by this serum. Of course, in a large number of children we might have the exceptional cases to which we have called attention, perhaps more among these strains than among others. So far, then, the work we have done on strains from epidemics of septic sore throat has confused our ideas with regard to the relationship of *Streptococcus epidemicus* to hemolytic streptococci obtained from other sources.

DR. D. J. DAVIS, Chicago: From the clinical standpoint it seems evident that present methods of testing toxins are in an imperfect state of development. Here are streptococci about which there seems to be no question as to their relation to the well defined clinical condition of septic sore throat. Likewise the scarlet fever streptococcus evidently has a similar relationship to the well defined disease scarlet fever. Yet the toxins of these organisms as indicated by present methods of testing them are not as definite as the diseases. It is interesting that there are relationships clinically between such diseases as septic sore throat and scarlet fever and it therefore might be expected that there would be some degree of confusion when toxin production is studied by present methods.

The History of Collapse Therapy in Tuberculosis.—It is interesting to note that as early as 1822 James Carson, of Liverpool, advocated pulmonary collapse in the treatment of tuberculosis and proved its feasibility by animal experimentation. He stated that "if ever this disease is to be cured, it must be accomplished by mechanical means, or in other words, by surgical operation." This statement was made, however, at a time when no generally accepted treatment, apart from the climatic treatment, was practiced. Fifteen years later (1837) William Stokes observed that spontaneous pneumothorax had in some instances a striking beneficial influence on pulmonary tuberculosis; and in 1860 W. H. Walshe, noting the same clinical phenomena, apparently thought of the therapeutic possibilities of pneumothorax, but dismissed it by saying that the occurrence of improvement was so rare as to give "no warranty for the fanciful proposal to treat phthisis by producing artificial pneumothorax." It was not until Forlanini of Pavia, in 1894, and J. B. Murphy, in this country, in 1898, reported their experiences, that the possible value of collapse therapy became appreciated. It is only within the past decade in this country that the value of collapse therapy has become widely recognized.—Funk, E. H.: The Selection of Cases of Chronic Pulmonary Tuberculosis Suitable for Collapse Therapy, *Penn. M. J.*, September, 1929.

MODERN METHODS OF TREATMENT OF PULMONARY TUBERCULOSIS*

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The modern method of treatment of pulmonary tuberculosis necessarily begins with its prevention.

With the compulsory pasteurization of milk now in use in our large cities, the careful inspection of dairy herds and elimination of infected cattle, glandular and bone and joint tuberculosis have practically become a thing of the past.

In the field of prevention of pulmonary tuberculosis, the work of Calmette [1] today offers hope. His treatment consists in giving to children during the first week of life three oral doses of 0.01 Gm. of B C G culture obtained by attenuating virulent bovine bacilli.

The prevention of the disease by removing the infant from contact with tuberculous parents and placing him in wholesome rural environments was the method instituted by Grancher.[2] These experiments successfully proved his contention that tuberculosis is a contagious and not an hereditary disease. Numerous preventoriums and institutions for undernourished children throughout the United States have done much, together with our improved methods of diagnosis, in eradicating the incidence of tuberculosis in children. The same factors of early diagnosis and hospitalization have contributed to make adult tuberculosis less formidable, both to the patient and to his family and friends. General improvement in living conditions has probably had a tremendous effect in reducing morbidity and mortality. All the modern methods of treatment that have attained any marked degree of success have one prime factor in common: rest in general and rest of the diseased lung. The more completely this aim is attained, the more certain and permanent the desired results will be. It may safely be stated that, of all the methods employed, rest alone in one form or another has stood the test of time.

MEDICAL TREATMENT

The diagnosis of active disease having been made, the patient should at once be put to bed, preferably in a sanatorium. It is here that he may more readily learn how to adjust his life to this new situation. This is best accomplished under close medical supervision and in surroundings where other patients are following the same regimen. Other things being equal, most patients do better in a high dry climate, such as the western plateau region affords. Rest of body and mind, fresh air and a well balanced diet rich in calories constitute the three requisites for ultimate arrest. Edward Rist [3] expresses his conviction that we shall continue to rely on these essentials even when some biologic product or chemical compound may be found as a specific.

Over how long a period enforced rest is to be followed must be determined in each individual case; but in general one may say that it should continue until all symptoms of activity have disappeared. An additional rest period of several weeks or months should then

* Read before the Section on Pharmacology and Therapeutics at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 12, 1929.

1. Calmette, A.; Guérin, C.; Weill-Hallé, B., and others: Essais d'immunisation contre l'infection, Bull. Acad. de méd. Paris **91**: 787 (June 24) 1924.
2. Armand-Delille, P.: The Grancher Institute: Its Rôle in the Campaign Against Tuberculosis, Internat. Pub. Health **2**: 113 (March-April) 1921.
3. Rist, Edward, quoted in Cocke, C. H.: South. M. J. **21**: 598 (Aug.) 1928.

be added before graduated exercise is encouraged. What orthopedist today would consider removing the splints from a broken bone as soon as his patient ceases to complain of local symptoms? Callous formation soon takes place, but firm bony union does not. It is certainly true that many a so-called relapse occurs merely because complete rest in bed was not enforced a few months longer.

How may this rest period be shortened and what measures employed to facilitate healing? Of all the specific remedies heralded since the tubercle bacillus was first discovered, not one has taken the place of rest. It has been pointed out that partial immobilization of the lung that bears the brunt of disease may be facilitated by postural rest. This is accomplished by having the patient lie on the affected side, first a few hours and gradually increasing up to twenty or more hours a day. By postural rest the diaphragm is forced higher into the thoracic cavity, the abdominal viscera acting somewhat as a splint to this muscle, the heart and mediastinal contents are displaced toward the dependent side and the ribs are brought closer together. Fluoroscopic examination reveals that aeration is much less complete and the recumbent lung lights up very poorly even during inspiration.[4]

In a former paper we [5] showed that in normal persons the movement of the diaphragm on the dependent side is first increased but at the end of thirty minutes the movement on the two sides tends to equalize. Finally at the end of one hour or more the movement on the dependent side is decidedly lessened. In cases of bilateral involvement of the apexes the use of shot bags placed on the chest has been recommended by Webb [6] and used with success, the weight being gradually increased from a few ounces to one or two pounds (0.5 or 1 Kg.).

It cannot be overemphasized that in the medical supervision of these cases the closest contact must be maintained between the patient and his physician. Only those who have faced the task of attaining a cure can realize the stimulus and moral support that can be gained from the visit of the skilled and sympathetic physician. Treatment of tuberculosis, being a difficult adjustment of the patient's life, is bound to require tact and involve compromise. Concessions must be made to the patient's personal taste, but the principle of prolonged rest is the thing that must not be sacrificed.

Following the introduction of artificial pneumothorax most spectacular results have been accomplished in well selected and advanced cases. Full credit should be given to James Carson [7] of Liverpool, who in 1821 recognized its value in pulmonary disease and advocated its use. Krause [8] calls attention to the fact that Hippocrates induced pneumothorax 400 years B. C. However, with aseptic methods lacking it was fortunate that artificial pneumothorax was not adopted until Forlanini of Pavia in 1882 emphasized its value. Brauer, by introducing the water manometer, made the procedure safer.

Pneumothorax is indicated:

1. In unilateral progressive pulmonary disease that has not responded to a carefully regulated rest regimen carried out over a reasonable length of time.
2. In severe or persistent pulmonary hemorrhage, provided it has been determined from which lung the bleeding occurs.
3. Following the removal of fluid in massive pleural effusions.
4. In maintaining collapse of spontaneous pneumothorax, provided the bronchial fistula is not persistent.

The purpose is to provide rest to the lung and bring about arrest of active disease. Healing is aided by a slowing of the pulmonary circulation, perhaps inducing hyperemia and thus leading to fibrosis. The lymphatic flow is decreased with a lessening of toxemia and disappearance of symptoms.

An involvement in the apex of the contralateral lung does not constitute a contraindication, and I have frequently seen such lesions subside following collapse of the more involved lung. This is due to the elimination of the major source of toxemia from the deflated lung and to improvement of the patient's general condition. The amount of strain that may be put on the contralateral lung can be determined only by long clinical experience.

The presence of pleural adhesions is the greatest obstacle to the production of successful collapse. Adhesions may be overcome in a few cases by gradually increasing the pressure with each refill or by severing them with the galvanocautery under thorascopic control, as advocated by Jacobaeus.[9] Matson [10] has successfully applied this procedure in America but, because of difficulties and complications, the operation must be left to those skilled in its technic. Best results are obtained in pneumothorax therapy by maintaining negative or low positive pressures, and I am convinced that it is far wiser to repeat refills at frequent intervals than to lengthen intervals at the expense of higher pressures. Complications, the foremost being the incidence of pleural effusion, are avoided in a great majority of cases.

With only a few patients have I employed simultaneous bilateral pneumothorax and in these, results were not encouraging. Its use is recommended by Serio [11] and others. Kinsella and Mattill [12] report results of treatment in twenty-seven such cases for periods ranging from two weeks to three years. Only under exceptional conditions do I consider this method indicated. In several cases I have employed pneumothorax on alternate sides with temporary success from the standpoint of the relief of symptoms. In more than half the patients suitable for pneumothorax treatment, pleuritic adhesions prevent success. It therefore remains for these patients to rely on phrenicotomy, extrapleural thoracoplasty or a combination of the two operations. In a small group of cases, extrapleural pneumolysis may be employed but the results are not uniformly good even in expert hands.

SURGERY

1. *Phrenicotomy.*—Hemidiaphragm paralysis by sectioning the phrenic nerve in the neck was first reported by Stuertz [13] in 1911. It was soon observed that this alone did not produce permanent paralysis. Felix [14] has demonstrated that failure may be due to the presence of an accessory phrenic nerve which occurs

4. Webb, G. B.; Forster, A. M., and Gilbert, G. B.: Postural Rest for Pulmonary Tuberculosis, J. A. M. A. **76**: 846-849 (March 26) 1921.
5. Webb, G. B., and Sevier, J. A.: The Diaphragmatic Excursion and Mediastinum in Lateral Recumbent Posture, Am. Rev. Tuberc. **9**: 72 (March) 1924.
6. Webb, G. B.: Pulmonary Tuberculosis: Prolonged Rest and Absorption of Deposits, J. A. M. A. **85**: 867-869 (Sept. 19) 1925.
7. Carson, James, cited by Riviere, C.: Pneumothorax and Surgical Treatment of Pulmonary Tuberculosis, Oxford Medical Publications, 1927.
8. Krause, A. K.: A Note on the Practice of Artificial Pneumothorax by the Hippocratic School, Am. Rev. Tuberc. **6**: 327 (June) 1922.
9. Jacobaeus, H. C.: The Cauterization of Adhesions in Artificial Pneumothorax Treatment of Tuberculosis: Technique and Indications, Together with a Survey of Results Obtained Thus Far, Am. Rev. Tuberc. **6**: 871 (Dec.) 1922.
10. Matson, R. C.: Surgical Treatment of Pulmonary Tuberculosis, Tr. College of Physicians of Philadelphia, series 3, volume 49.
11. Serio, P.: General Remarks on Hypotensive Artificial Pneumothorax, and Especially Simultaneous Bilateral Pneumothorax, Am. Rev. Tuberc. **18**: 109 (Aug.) 1928.
12. Kinsella, T. J., and Mattill, P. M.: Bilateral Pneumothorax, Am. Rev. Tuberc. **16**: 655 (Dec.) 1927.
13. Stuertz, cited by Alexander, John: The Surgery of Pulmonary Tuberculosis, p. 175.
14. Felix, Willy: Anatomische, experimentelle und klinische Untersuchungen über den Phrenikus und über Zwerchfellinnervation, Deutsche Ztschr. f. Chir. **171**: 283, 1922.

in from 25 to 35 per cent of people. Also the twelfth intercostal nerve supplies motor fibers to the diaphragm. Felix therefore advocates the radical phrenicectomy which he terms phrenic exeresis. This is done by severing the phrenic nerve as it passes over the scalenus anticus muscle in the neck. The peripheral end is grasped with Thiersch forceps and rotated until from 10 to 12 cm. of the nerve is evulsed. One may then feel that the accessory connections with the main branch have been interrupted. Phrenic exeresis offers the advantage of being a short and safe procedure, though accidents such as hemorrhage, air embolus and injury to other nerves have been reported. This operation is indicated, as an independent therapeutic measure, when the better lung is too much involved to permit of total collapse of the lung that is more diseased and when the latter is not immobilized by pleural adhesions. It is estimated that phrenic exeresis produces a diminution of one third to one fourth of lung volume, which is equivalent to the introduction of from 300 to 400 cc. of air in the pleural cavity. Sauerbruch,[15] Hedblom [16] and others use this procedure as a test of the contralateral lung in doubtful cases prior to thoracoplasty. The Matsons [10] precede every thoracoplasty with radical phrenicotomy. Alexander [17] also advocates this on the ground that the thoracoplasty is aided by the partial shrinkage of the lung.

Phrenic exeresis may be used to supplement pneumothorax when adhesions do not permit collapse of a lower lobe.

It has not been my experience that phrenicotomy is without value in upper lobe involvement. Roentgenograms of one of our cases show the disappearance of an annular shadow in the right upper lobe following phrenicectomy. In this case pneumothorax was tried without success. Certainly the full benefit hoped for from radical phrenicectomy cannot be realized when the diaphragm is largely immobilized by pleural adhesions. Lawrason Brown [18] believes that phrenic exeresis at times produces so much improvement that neither thoracoplasty nor artificial pneumothorax is required.

2. *Extrapleural Thoracoplasty.*—Extrapleural thoracoplasty has a mechanical advantage over phrenicotomy in that it greatly reduces costal motion. The operation consists in the removal of sufficiently large segments of the ribs on the diseased side so that the chest wall sinks in. Pressure and rest radically reduce the functional activity of the lung. Archibald [19] points out that any flow of air into or out of the lung becomes largely passive, and the absorption of toxins from tuberculous tissue through the lymphatics is largely stopped by the mechanical compression of the diseased lung. The operation generally performed today is that of Sauerbruch, who advocates removing sections of the ribs close to the spine from the eleventh to the first inclusive. This should be done in at least two stages. Hedblom's [16] experience convinces him that indications for thoracoplasty may be extended to a large proportion of patients by a multiple stage operation, only as much being done at one sitting as the patient's condition will stand.

In general, thoracoplasty is indicated:

1. In pulmonary tuberculosis when the disease is essentially unilateral and of a fibroid productive type, the patient not having responded favorably to prolonged rest and when pneumothorax has been attempted without success.

2. In patients in whom reexpansion of the lung following pneumothorax has taken place and the disease process has become reactivated.

3. In persistent pulmonary bleeding in which pneumothorax proves impossible.

4. Supplementary to artificial pneumothorax when collapse due to pleural adhesions is not complete.

The main requirement for operation is the timely performance rather than its use as a last resort.

Contraindications are:

1. Active bilateral disease.
2. Advancing caseous tuberculosis.
3. Extensive tuberculosis in other organs.
4. In cases in which there is nephritis, hepatic cirrhosis or serious cardiac involvement.

The question must be decided whether it is better to continue hospitalization over a prolonged period with a meager hope of arrest or resort to a series of major operations with a mortality as high as from 10 to 15 per cent. Only the skilled specialist in tuberculosis should be asked to make this decision.

Alexander [20] gives convincing evidence of the value of thoracoplasty in advanced pulmonary tuberculosis. In a series of 1,159 cases collected from the literature there was an immediate mortality of approximately 1.5 per cent due to shock, cardiac failure, anesthetic poisoning and the like; 13.2 per cent patients died during the first two months from causes connected with operation; 36.8 per cent were reported as cured; 24.4 per cent improved and 5 per cent unimproved or worse. Death from causes in no way connected with operation occurred in 19.4 per cent. In short, surgery has favorably influenced 61.2 per cent of the patients operated on, with 36.8 per cent reported actually cured.

It is amazing that such results have been attained, in view of the poor general condition of the patients selected. A higher mortality rate following such a major operative procedure would be expected. Better results in the surgery of pulmonary tuberculosis must depend on more careful selection of the patients, improved operative technic, and more scrupulous aftercare.

ABSTRACT OF DISCUSSION

DR. WILLIAM C. VOORSANGER, San Francisco: If specialists in tuberculosis have given anything to the general medical profession, it is the principle of rest in treatment not only of tuberculosis but of all diseases. Rest is recognized as our most potent therapeutic measure. Dr. Sevier showed how certain cavities disappear. They probably disappear without the use of shot bags. I believe that prolonged rest will cure many lesions in the lungs besides cavities. Whether it is purely a matter of rest and not something inherent in the patient himself is still a matter of doubt. One thing we do know, and that is that certain patients do not get well. We also know that pneumothorax and thoracoplasty have cured many cavities, but we have observed during the last few years that these cavities gradually disappear. Some people call it absorption of the lesion; some say there is a fibrosis that cannot be seen in roentgenograms and others say that the walls of the cavity grow inward. I believe lesions absorb, and that the principle of prolonged rest, if properly carried out, will aid in the absorption of these lesions. I have had good and bad results with pneumothorax. I have compressed some cavities and after two or three compressions seen most brilliant results. I have also seen recurrence after pneumothorax. Is it not possible that some of our brilliant results from pneumothorax and thoracoplasty may be due to the fact that we are handling

15. Sauerbruch, F.: Chirurgie der Brustorgane **1**: 772-774, 1920.
16. Hedblom, C. A.: The Surgical Treatment of Pulmonary Tuberculosis, Illinois M. J. **54**: 134 (Aug.) 1928.
17. Alexander, John: The Surgery of Pulmonary Tuberculosis, p. 183.
18. Brown, Lawrason: Practical Medicine Series, 1928.
19. Archibald, Edward: Pulmonary Tuberculosis: Its Surgical Treatment, J. A. M. A. **85**: 663 (Aug. 29) 1925.
20. Alexander, John: The Surgery of Pulmonary Tuberculosis, p. 321.

easily collapsible cavities and that when one cannot collapse the cavity one cannot get a result? I believe that some of these results occur very well with rest, even at sea level.

DR. W. F. DUTTON, Amarillo, Texas: I want to emphasize the inability of the general practitioner to make an early diagnosis of pulmonary tuberculosis. Physicians who are specializing in tuberculosis and those who are directing sanatoriums for tuberculosis trust that they will receive patients early in order that they will not have to give so much attention to surgical conditions. There is available at Colorado Springs, under the direction of Dr. Sevier and Dr. Webb, a school wherein general practitioners, internists and others who desire it can acquire first-hand information on the diagnostic procedure of pulmonary tuberculosis. A great handicap in the treatment of tuberculosis lies in lack of experience and inability to select incipient cases.

DR. RAY W. MATSON, Portland, Ore.: Rest naturally is the primary factor in the treatment of any inflammatory condition, and it applies to the lungs as well as to any other diseased or injured part. Bed rest alone has yielded marvelous results, but the newer forms of collapse therapy have revolutionized the treatment of tuberculosis. I refer to artificial collapse of the lung by means of induced pneumothorax, artificial diaphragm paralysis, and extrapleural thoracoplasty. I am sure our statistics during the next few years will reflect the beneficial influence of these measures.

DR. J. A. SEVIER, Colorado Springs, Colo.: I am not recommending shot bags as a cure. I think they are a help in immobilizing the lungs, but rest in some form or other is the one essential thing I wanted to bring out.

A SOY BEAN FOOD PREPARATION FOR FEEDING INFANTS WITH MILK IDIOSYNCRASY*

LEWIS WEBB HILL, M.D.
AND
HAROLD C. STUART, M.D.
BOSTON

Human milk is universally granted to be the best food for infants during the first few months of life, and cow's milk in some form or with some modification is recognized as the best substitute when human milk is not available. It has been conceded, however, that for the exceptional infant cow's milk may be contraindicated either for a short, temporary period or, more rarely, for a protracted interval of time. It is not our purpose to consider the conditions under which cow's milk may prove an unsuitable food for a given infant, nor to discuss the underlying factors that render it so; but hypersensitiveness to cow's milk protein may be mentioned as the most striking and important example. It should also be recalled that milk-free diets have been reported as efficacious in the treatment of infantile eczema,[1] regardless of the presence or absence of other manifestations of milk idiosyncrasy or positive skin tests. Such diets have not in the past been recommended in the treatment of eczema because the digestive disturbances often resulting were more serious than the eczema itself. Schloss[2] has made the statement: "It is obvious that definite proof of the allergic nature of infantile eczema must depend on the development of a food, free from milk protein, which is capable of maintaining nutrition." It is our purpose to present such a food, which may be used over a long period in young infants without undue fear of interference with normal growth and nutrition.

All milk may be omitted from an infant's diet for a short period of time and the immediate energy requirements met with sugars, cereal and fruit juices; but under such circumstances some degree of protein starvation always exists, and if this imbalance in diet is continued the infant will quickly fail to gain, develop and thrive. Other proteins may be added with apparent success for short periods; but the only food substances providing in suitable concentration all of the amino-acids specifically needed by the infant for continued normal development are the animal milks, certain of the animal meats, and soy bean flour.[3]

Of the actual milks other than cow's milk, that of the goat is most readily available and has in the past been used successfully in many infants unable to tolerate even a small amount of cow's milk.[4] But goat's milk is not always well tolerated by these infants. Czerny,[5] early in this century, called attention to a type of infant that did not thrive on any animal milk.

The proteins of goat's milk and cow's milk are biologically so similar that one would expect any differences in tolerance to be differences in degree rather than in type; and this often proves to be the clinical experience. Bordet[6] and Wells[7] have both demonstrated by anaphylactic experiments in guinea-pigs, and Fleischer[8] with precipitin reactions, that the casein of cow's milk is closely related antigenically with that of goat's milk. One of us (H. C. S.), in collaboration with Anderson and Schloss, in work soon to be published, confirmed by further guinea-pig inoculations the immunologic interaction between cow's milk and goat's milk proteins, and also demonstrated a similar interrelationship between human milk and goat's milk. The anaphylactic reactions by the guinea-pig inoculation method between human milk and cow's milk were less intense and regular, although quite definite, but Anderson and Schloss obtained clean cut precipitin reactions between these caseins.

These experiments suggest that the species specificity of the caseins of various milks is not marked but that, of those studied, human milk and cow's milk are the most dissimilar, giving the least intense precipitin and anaphylactic interactions.

Attempts to utilize animal meat protein in place of milk proteins during the early months of life have met with varying success over short periods but with almost regular failure when continued over a long period. This method gives greater promise after the first year.

Soy bean flour has been subjected to careful study by a number of workers,[9] and the result of these studies would suggest that it could be used as the sole source of protein in the infant's diet. Ruhräh[10] in this country originally recommended that soy bean flour be used as

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* From the Department of Pediatrics, Harvard University Medical School.

* This product has been accepted for inclusion in New and Nonofficial Remedies by the Council on Pharmacy and Chemistry. The announcement of this acceptance appears on page 989 of this issue.

1. Blackfan, K. D.: Eczema, Am. J. Dis. Child. **11**: 441 (June) 1916.
2. Schloss, O. M.: Allergy in Infants and Children, Am. J. Dis. Child. **19**: 433 (June) 1920.

3. The chief protein in soy bean is glycinin. It contains the following amino-acids:

Glycine	1.0	Aspartic acid	9.4
Alanine	...	Glutamic acid	19.5
Valine	0.7	Hydroxylglutamic acid	5.5
Leucine	8.5	Arginine	5.1
Proline	3.8	Histidine	1.4
Phenylalanine	3.9	Lysine	2.7
Tyrosine	1.9	Tryptophane	1.7
Cystine	1.1		

(Personal communication from Mr. D. Preese Jones, U. S. Department of Agriculture.)

4. Park, E. A.: Case of Hypersensitiveness to Cow's Milk, Am. J. Dis. Child. **19**: 46 (Jan.) 1920.
5. Czerny, A.: Jahrb. f. Kinderh., 1905; Monatschr. f. Kinderh. **6**: 9, 1907.
6. Bordet: Ann. de l'Inst. Pasteur **23**: 166, 1909.
7. Wells, H. G.: J. Infect. Dis. **9**: 147, 1911.
8. Fleischer: Russk. Vrach., 1908, p. 49; abstr. Centralbl. f. Path. **20**: 308, 1909.
9. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **32**: 369 (Dec.) 1917. Jones, D. B., and Waterman, H. C.: Ibid. **46**: 459 (May) 1921.
10. Ruhräh, John: The Soy Bean as an Article of Diet for Infants, J. A. M. A. **54**: 1664 (May 21) 1910.

gruel in the treatment of infantile diarrhea. But it had been used in one form or another in China as a supplementary infant food for many years. Soy bean flour was the only source of protein in the diet of an infant for the entire period from six weeks to eight months, as reported by Tso.[11] Except for the development of mild rickets, which was not controlled by cod liver oil alone, this infant progressed normally.

TABLE 1.—*Inorganic Ingredients as Percentage of Total Solids*

	Cow's Milk	Soy Bean Meal
Calcium	0.920	0.180
Magnesium	0.092	0.300
Sodium	0.392	0.140
Potassium	1.100	2.060
Phosphorus	0.715	0.820
Chlorine	0.816	0.005

The percentage of total solids in usual cow's milk formulas is very similar to the percentage of total solids in our soy bean mixture represented by soy bean flour. Therefore the relationship presented in this table hold between cow's milk formulas and our soy bean meal formulas.

One of us (L. W. H.) having had to care for an extreme case of milk idiosyncrasy and having experienced acutely the difficulty of providing a suitable substitute food, determined to attempt the preparation of a dried infant food that would be complete in meeting an infant's needs, and yet free from animal protein. Soy bean flour was chosen as the most promising food

TABLE 2.—*Ingredients in the Original Mixture*

	Per Cent
Soy bean flour (ground press cake)	67.50
Barley flour	9.50
Olive oil	18.95
Sodium chloride	1.35
Calcium carbonate	2.70
Total	100

from which to meet the protein requirements. With this flour as the source of protein, a formula was developed with the assistance of Dr. James L. Gamble which would meet the theoretical requirements of infants. Sufficient soy bean flour was provided to give a protein percentage of 4 in the finally constituted and diluted food. This higher percentage than that normally present in milk formulas was adopted because of differences in the amino-acid content of the two proteins and in order to assure ample amounts of each of the essential ingredients. The salt contents of cow's milk and soy bean flour were compared as shown in table 1, in order to determine the additional salts required. From this table it is apparent that magnesium, potassium and phosphorus are amply provided in soy bean flour but that this food contains much smaller amounts of calcium, sodium and chlorine. To meet this difference Dr. Gamble suggested the addition of calcium carbonate, 2 Gm., and sodium chloride, 1 Gm., per hundred grams of solids. As to the other structural substances, the so-called vitamins, the work of Osborne and Mendel [9] would suggest that soy bean meal, if properly prepared and cooked, contains adequate amounts. But owing to possible differences in the content of the fat soluble vitamins in various samples, depending on the completeness or incompleteness of the removal of the oils in the preparation of the flour, it was felt that cod liver oil should be given regularly. It was not, however, included in the formula for this food but left to be given as an additional food substance, together with orange juice, as is customary with ordinary milk formulas.

11. Tso, Ernest: Chinese J. Physiol. **2**: 33 (Jan.) 1928.

To meet the additional energy requirements, the fat content was raised by the inclusion of olive oil in amounts sufficient to make the final fat content in the diluted food 3 per cent, and barley flour in quantities to make the final carbohydrate percentage about 4. This gave the percentage of ingredients in the original mixture shown in table 2.

In order to have this formula properly prepared and available for use whenever required, the cooperation of Mr. L. D. Johnson of Mead, Johnson and Company was solicited. From the formula presented by us, Mr. Johnson prepared a food under the name "Sobee," which we have had an opportunity to use in the feeding of a number of infants during recent months. The food substances listed in the formula (table 2) are mixed with water, homogenized, dried, and sealed in tins. The composition of the dried product is given in table 3.

Sugar was purposely omitted, as it was felt that it would be better to leave the determination of the amount and kind of sugar to be added to the discretion of the physician, in order to meet the needs of infants with varying degrees of tolerance for carbohydrate. Sugar in some form should always be added, unless the infant has a sugar intolerance.

TABLE 3.—*Composition of Dried Product*

	Per Cent
Fat	22.50
Protein	33.20
Carbohydrates	32.80
Salts	8.50
Moisture	3.00
Calories per ounce	134

When this dried food is reliquefied, six tablespoonfuls to 7 ounces of water, it has the composition, given in table 5, which we term "full strength."

TABLE 4.—*Distribution of Mineral Salts*

	Per Cent
Calcium oxide	1.97
Phosphorus pentoxide	1.24
Magnesium oxide	0.38
Sodium oxide	1.05
Potassium oxide	1.82
Sulphur trioxide	0.29
Chlorine	0.80
Ferric oxide	0.05
Carbon dioxide	0.70

One level tablespoonful of dextrin-maltose added to the mixture given in table 5 raises the total carbohydrate percentage to 6.82; one and one-half level tablespoonfuls added raises it to 8.03 per cent.

TABLE 5.—*Composition of Reliquefied Dried Food*

	Per Cent
Fat	2.81
Carbohydrate	4.07 (starch)
Protein	4.15
Salts	1.06
p_H	7.2
Calories per ounce	17

The product is a light brown flour of moderately fine consistency, inoffensive in taste and smell, which mixes well with water, and goes through a nipple without difficulty. The first points to be determined with such a preparation before allowing it to be distributed for general use are:

1. Is it tolerated by the digestive tract?
2. Will it maintain nutrition?

We have used in the last year a large amount of this food, and have determined to our entire satisfaction that infants take it well, digest it and thrive on it. The stools are likely to be somewhat more frequent (from two to four a day) than those from a diet of cow's milk, but there is rarely diarrhea.

For most babies under 8 months of age, we have not started with the full strength formula, but rather about two-thirds strength, that is, four level tablespoonfuls to 7 ounces of water, and consider it a good plan with small babies for the first few feedings to use it half strength. This may soon be increased. For older babies we have used it full strength. One fluidounce equals approximately 17 calories, and when sugar is added, this is, of course, increased. We have fed about forty babies on this food: one for more than eight months, several others for periods of two months or more. These babies have done well, and while we would certainly not advance the opinion that this preparation is as good a food for infants in general as the usual formulas made from cow's milk, we have used it enough to know that it is a quite efficient and practical substitute for milk, when it is not desirable to use the latter.

We have had some excellent results with eczema and will say at this time that we believe this food may prove to be very valuable as a temporary diet for babies with severe eczema. These cases will, however, be reported in detail later.

483 Beacon Street.

Clinical Notes, Suggestions and New Instruments

SPONTANEOUS RUPTURE OF THE SPLEEN

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Assistant Attending Surgeon, Orange Memorial Hospital

Spontaneous rupture of the spleen in an apparently healthy man is a very rare event. Susman[1] reported a case in July, 1927, and collected six other cases from the literature. In some of these instances the patient was not perfectly healthy. Rhame[2] reported a case in 1928. Another case has recently been detailed by T. Vinogradoff.[3] Therefore the case presented here is of sufficient rarity to be reported.

REPORT OF CASE

C. T. P., a seed salesman, aged 44, had always been fairly healthy. The family history was negative. He had had at times a chronic cough due to the dust involved in his business, and although he had always been thin, no sign of tuberculosis had ever been found. For a few days before he was taken ill, he had had a slight cough and had been home one day, three days before operation, with a stiff neck. He had no fever or signs of influenzal infection.

April 11, 1929, at 4 p. m., he was seated at his desk in his New York office when he suddenly felt a most intense pain in the abdomen. This came on without warning, exertion, coughing or sneezing. He had eaten a sandwich and a cup of coffee for lunch at noon and had coughed slightly then once but had not coughed afterward. His bowels had moved well in the morning. The pain continued without relief. He was seen by a physician in New York, who treated him with carminatives, and he was brought to his home in New Jersey at 10 p. m. with instructions for an enema. The enema was unsuccessfully attempted, because the pain was greatly increased by moving or lying down. He did not vomit at any time and had belched a little gas during the first hour without relief. I saw him at midnight and advised an immediate exploration.

The patient was extremely ill and in agonizing pain. He was sitting leaning forward with his elbows on his knees, in moderate shock. The pain was greatly increased by any movement and to lie down was intense agony. He located the pain across the upper part of the abdomen. The pain did not radiate. The abdomen was held absolutely rigid and was acutely tender in the upper half and almost as rigid and tender in the lower half. The abdomen was not distended. His breathing was entirely pulmonary. The temperature was 100 F.; the pulse was 112, and respirations were 24, on admission to the hospital. The remainder of the examination was negative.

A diagnosis of ruptured duodenal ulcer was made. Because of the clear indications for operation, a blood count was not taken beforehand. The patient was admitted to the Orange Memorial Hospital and was immediately operated on. A high right rectus incision was made. There was a large amount of free blood in the abdominal cavity which was found to be coming from the left upper quadrant. The spleen was ruptured and actively bleeding. The remainder of the abdominal organs were normal. The incision was enlarged by a right angle incision across the midline. The spleen was freed from a few adhesions at the upper pole. The splenic artery and vein were ligated and the spleen was excised. The abdomen was closed without a drain. The patient was given 1,000 cc. of saline solution intravenously immediately afterward. He made an excellent recovery with moderate temperature reaction and little distention.

The spleen was a little larger than normal. There was a tear in the capsule of the posterior surface extending from the hilum almost to the external margin. Near the hilum on the posterior surface was a superficial blood clot 2 inches in diameter and one-sixteenth inch thick. Otherwise the spleen appeared to be normal in every way. Microscopic examination of the spleen by Dr. Abel, pathologist of the Orange Memorial Hospital, showed normal splenic tissue.

April 15, a blood examination showed: hemoglobin, 65 per cent; red blood cells, 3,750,000; white cells, 41,000; polymorphonuclears, 38 per cent; lymphocytes, 62 per cent, and of large size; red cells, nucleated, 2; blood platelets, 400,000.

June 22, blood examination showed: hemoglobin, 78 per cent; red cells, 4,658,000; white cells, 6,400; polymorphonuclears, 61 per cent; lymphocytes, 32 per cent, and blood platelets, 385,000.

COMMENT

The patient has been in good condition since the operation, and returned to work at the end of seven weeks.

59 Main Street.

1. Susman, M. P.: Brit. J. Surg. **15**: 47 (July) 1927.
2. Rhame, J. S.: Ann. Surg. **88**: 212 (Aug.) 1928.
3. Vinogradoff, T.: Mosk. med. j. (no. 6) **8**: 33, 1923.

A CONTRASTING MEDIUM FOR PYELOGRAPHIC STUDY

LOWRAIN E. MCCREA, M.D., PHILADELPHIA

Since 1897, when Tullier first attempted to render the urinary tract opaque, urologists have striven to find an efficient pyelographic medium of low toxicity. In the past, numerous solutions have been used, each having its advantages heralded as ideal, but for one reason or another they all have been discarded. At present the most widely accepted and generally employed pyelographic medium is an aqueous solution of sodium iodide. The strength customarily used is 12.5 per cent; however, in the service of Dr. William H. Mackinney at the Lankenau Hospital a 20 per cent solution was employed as a routine until the adoption of the new medium. The reason for the use of a solution of such strength was that clinically it was no more irritating than a solution of 12.5 per cent and in cases of hydronephrosis and pyonephrosis in which the medium was diluted by the fluid contained within the kidney pelvis, the mixture still has enough density to make a quite discernible opaque shadow.

With the advent of intravenous injection of indigo carmine as a routine measure in kidney study there was needed a solution that would contrast with this eliminated dyestuff in those instances in which regurgitation from the ureter into the bladder occurred during a pyelographic study. Regurgitation from the ureter of the pyelographic medium occurs in those instances in which the ureter is blocked by a calculus, kink or stricture, and also when the pelvis of the kidney is filled to capacity. In those cases in which indigo carmine is used as an elimination medium, the solution generally used in pyelography becomes

stained by the eliminated dye and it is impossible to tell whether the dye is coloring the urine alone as it is passed out of the ureter, or whether there is a regurgitation of dyestuff, urine and pyelographic medium. Sodium iodide solution, being clear and colorless, merely dilutes the mixture of itself with the eliminated dye and urine from the ureter or kidney pelvis, regurgitated from the ureter, the resultant mixture being unnoticed by the observer.

I suggested the use of a solution of the usual medium (sodium iodide) but endowed with a color that would contrast with the indigo carmine so that it might be observed through the cystoscope if regurgitation occurred during a pyelographic study.

For this contrasting opaque medium the following combination was prepared and is now used as a routine:

Sodium iodide	12 Gm.
Emulsion of silver iodide 5 per cent	20 Gm.
Distilled water sufficient to make	60 Gm.

The combination is a thin watery creamy white mixture. All pyelograms are done with the observer watching the ureteral orifice; the moment regurgitation occurs, the injection is stopped. The maximum amount of opaque solution injected into the pelvis, if there is no regurgitation, is 20 cc., which is a sufficient quantity to insure an opaque shadow even in those cases in which there is a relatively large retention of urine in the kidney pelvis. The advantage of the contrasting medium may be noted in those cases in which there is an obstruction of the ureter and in which a pyelogram or ureterogram is attempted. In these instances, as soon as the ureter is filled, the medium regurgitates back into the bladder. The fluid regurgitating along the side of the ureteral catheter may be immediately noticed as a bluish cream colored fluid escaping from the ureteral orifice into the clear distention fluid of the bladder.

1923 Spruce Street.

EXFOLIATIVE DERMATITIS FROM POTASSIUM SULPHOCYANATE THERAPY

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Exfoliative dermatitis may be caused by innumerable substances, but to date no mention has been made of potassium sulphocyanate, as introduced by Westfall[1] in the treatment of essential hypertension, as a causative factor. The case reported here illustrates an unfavorable instance in the use of this drug, in addition to those mentioned recently by Palmer and Sprague.[2]

REPORT OF CASE

History.—C. D., an American electrician, aged 37, consulted us, Oct. 28, 1928, because of shortness of breath. Two years before, when he complained of headaches so severe that he was obliged to quit work and go home to rest to obtain relief, he had been told that he had high blood pressure. Six weeks before he began to have dyspnea and cough and had to sit up at night.

Physical Examination.—The patient was well nourished, 5 feet 10 inches (178 cm.) tall, weighing 155 pounds (70 Kg.), dyspneic, cyanotic, coughing frequently and perspiring freely. The head, eyes, ears, nose and throat were normal. The pupils reacted to light and distance. No ocular abnormalities were present. The skin was hot and moist. The thyroid was grade 1 and smooth. The jugular pulse was present. The apex of the heart was in the sixth space, 11 cm. to the left of the midsternal line and 2.5 cm. outside the midclavicular line. The right border of dulness was 5 cm. The rate was 120 and regular. No murmurs were present. Moist râles were present in both bases. The liver was not enlarged. There was a slight pitting edema of the ankles. A fine tremor of the hands was present.

1. Westfall, K.: Ztschr. f. klin. Med. **101**: 545, 1925; Deutsches Arch. f. klin. Med. **152**: 331, 1926.
2. Palmer, R. S., and Sprague, H. B.: M. Clin. North America **13**: 215 (July) 1929.

The urinalysis was negative. The blood count was within normal limits. The blood Wassermann reaction was negative. Nonprotein nitrogen was 60 mg. The phenolsulphonphthalein output was 60 per cent in forty-five minutes intravenously. An electrocardiogram showed normal rhythm; rate, 120; left axis deviation, and index, plus 17. The heart measurements as revealed by a 7 foot plate were: supracardiac, 8.0 cm.; M. R., 4.0; M. L., 11.2; total, 15.2; oblique, 17.2. The internal thoracic diameter was 25.5. The blood pressure was 240 systolic and 140 diastolic.

The diagnosis[3] made was: etiologic, hyperthyroidism and "essential hypertension"; anatomic, left ventricle hypertrophy and dilatation, with left axis deviation; physiologic, sinus rhythm.

Treatment.—The patient was digitalized by the body weight method in twenty-four hours, and then maintenance doses of digitalis were given. The basal metabolic rate, after compensation was established, was plus 52. Compound solution of iodine was administered for fourteen days. He was then admitted to St. Elizabeth Hospital, where a thyroidectomy was done by Dr. A. W. Carley without untoward event. He was discharged in three weeks. The basal metabolic rate at this time was plus 1. The blood pressure remained unchanged, and potassium sulphocyanate was started as recommended by Gager[4] in doses of 1½ grains to a drachm, three times daily the first week; twice daily the second week, and once daily the third week.

Jan. 2, 1929, the tenth day of medication, an acute, diffuse erythematous dermatitis appeared, involving the face, neck, hands, forearms and ankles. The face was slightly edematous with marked puffiness about the eyelids. The eruption did not have a definite border, but diffused out over the chest, back and shoulders. The subjective symptoms of burning and itching preceded the eruption by approximately two days. As the eruption appeared, these manifestations became more intense. Over the surface there appeared numerous scattered pruritic papules. The eruption progressed rapidly and reached its maximum intensity at the end of four days. At that time it was a generalized erythematous, papular, squamous eruption which closely resembled the exfoliating accidents of arsphenaminization.

On the first appearance of the dermatitis the potassium sulphocyanate was withdrawn and the patient alkalized. Colloid starch-soda baths were instituted and the diet was restricted. The dermatitis involuted rapidly, going through the final stage of intense dryness and desquamation.

By February 2 the eruption had involuted entirely. Potassium sulphocyanate was again given, March 19, but in much smaller doses. In three days there again appeared an acute inflammatory erythematous dermatitis about the face, hands and lower third of the forearms. It was much milder and the subjective symptoms were not as severe. This time the eruption did not become generalized, and involuted in two weeks. It was felt that this second attack was sufficient proof to attribute the dermatitis to the medication the patient had received in both instances, namely, potassium sulphocyanate.

Harries Building.

3. The diagnosis conforms to the nomenclature for cardiac diagnosis approved by the American Heart Association: Am. Heart J. **2**: 202, 1926, 1927.
4. Gager, L. T.: Incidence and Management of Hypertension, J. A. M. A. **90**: 82 (Jan. 14) 1928.

Surgery and Pathology.—One of the greatest contributions which surgery has made to medicine is in the field of pathology. The pathology of the dead, a most excellent foundation, has been supplanted by the pathology of the living. In the former, terminal lesions only can be studied, while in the latter they are observed in all stages from incipiency to the end. Gross and microscopic changes in organs which have been the subject of clinical study can be correlated with the signs and symptoms thereby elicited and observed. Opportunity is afforded for both physiological and pathological investigation and upon the knowledge so gained to formulate scientific, rational diagnosis and treatment, and to predicate still further advance in the science of medicine.—Abell, Irvin: Recent Advances in Surgery, *J. Oklahoma M. A.*, June, 1929.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

SOBEE.—A mixture of soy bean flour 67.5 per cent and barley flour 9.5 per cent, to which has been added olive oil 19.0 per cent, sodium chloride 1.3 per cent, and calcium carbonate 2.7 per cent. The approximate analysis of powdered sobee is: fat 22.50, protein 33.20, carbohydrate (barley and soy bean starches) 32.61, ash 8.51, moisture 3.18. The nutritive value of 500 Gm. is approximately equivalent to 2,223 calories.

Action and Uses.—Sobee is used as a substitute in the diet of infants who are sensitive to the proteins of milk.

Dosage.—The normal dilution of sobee is used according to the age and weight of the child. The normal dilution is prepared by adding 1 ounce by weight (6 level tablespoonfuls) of sobee to 7 ounces of water and bringing to boiling temperature. This dilution represents approximately fat 2.81, protein 4.15, carbohydrate 4.07, salts 1.06. The p_H of this mixture is 7.2 and the nutritive value of 1 fluidounce is approximately equivalent to 17 calories. This is the average feeding, to which may be added 15 Gm. (1 level tablespoonful) of a suitable carbohydrate.

Manufactured by Mead Johnson & Co., Evansville, Ind. No U. S. patent. U. S. trademark 252,447.

Sobee is prepared by mixing soy bean flour 67.5 parts and barley flour 9.5 parts with a suitable amount of water and cooking; after cooking, olive oil 19.0 parts, sodium chloride 1.3 parts, and calcium carbonate 2.7 parts are added; the mixture is homogenized, dried and then packed in hermetically sealed cans in an atmosphere of nitrogen. Its composition is determined by the usual methods of the American Association of Agricultural Chemists except for the fat, which is determined as follows: Approximately 1 Gm. of powdered sobee weighed accurately is placed in a flask; 9 to 10 cc. of water, 1 to 1.5 cc. of stronger ammonia water and 10 cc. of alcohol are added; the flask is shaken; 25 cc. each of ethyl ether and petroleum ether are added; the flask is then shaken and centrifugated at moderate speed for thirty seconds; the combined ether solution is poured off into a tared aluminum dish; the extraction with 10 cc. of alcohol and 25 cc. each of ethyl ether and petroleum ether is repeated and the combined ether solution again poured off into the same aluminum dish; the solvents are evaporated and the remainder dried to constant weight: the increase in weight represents the fat content of sobee.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

W. A. PUCKNER, Secretary.

THE CALL FOR THE APPOINTMENT OF DELEGATES TO THE UNITED STATES PHARMACOPEIAL CONVENTION

The organizations entitled to send delegates to the convention have received official notification that the names of their delegates and alternates must be in the hands of the proper officials by March 14, 1930. The Council on Pharmacy and Chemistry of the American Medical Association takes this occasion and means to urge all these organizations, medical, pharmaceutic, chemical and others carefully to select delegates noted for high ideals, for breadth of vision, for sane understanding and for sound judgment, as well as for technical knowledge; men who are fitted by temperament and training to collaborate, to help by deed and by counsel to keep the United States Pharmacopeia a work in which American medicine and American pharmacy may feel a just pride; a work that fairly reflects modern medical and pharmaceutic science; a work that is conservative of the best of the past, and progressive, constructive, sensitive to the best of the new. The aim and purpose of the Pharmacopeia was admirably expressed by its principal founder, Dr. Lyman Spalding, in the preface to the first edition:

> It is the object of a pharmacopoeia to select from among substances which possess medicinal power, those, the utility of which is most fully established and best understood; and to form from them preparations and compositions, in which their powers may be exerted to the greatest advantage.
>
> The value of a pharmacopoeia depends upon the fidelity with which it conforms to the best state of medical knowledge of the day. Its usefulness depends upon the sanction it receives from the medical community and the public; and the extent to which it governs the language and practice of those for whose use it is intended.

These principles hold as true today as when they were written, although in the intervening hundred and ten years many and great changes have taken place in medicine and in pharmacy; changes that were reflected in the successive revisions, not only in the content of the book, but also in the method of revision. Originally the pharmacopeial revision was controlled exclusively by the physicians; but as the pharmaceutic problems increased in magnitude, the pharmaceutic profession was taken into equal partnership. With the progressive evolution of scientific pharmacy, and especially with the introduction of more scientific standards and tests, the major share of the technical work of the revision fell on the pharmaceutic members, who therefore justly became numerically preponderant in the "revision committee," the committee charged with the actual task of the revision. In the last convention the relative membership of medicine and pharmacy on this committee was fixed, by mutual consent, as 1 to 2. This division of numbers does not, of course, imply a similar division of influence as regards general policies; in regard to these, every member of the convention, and every member of the revision committee, should feel individually responsible to the Pharmacopeia as a whole, and not to any contingent. It would be very unfortunate if the general policies of the Pharmacopeia were to pass into the control of any special group, with the consequent loss of interest of other groups. Certainly the aid and counsel of the physicians is needed as much as ever, to carry out the original objects and ideals.

The division applied only to the technical tasks which the two professions perform in the revision, and which the revision committee divided accordingly. Fundamentally, the pharmacopeial revision divides itself into two tasks: first, the selection of the drugs "the utility of which is most fully established and best understood," and for which the Pharmacopeia is to provide standards; and, second, the selection of the standards of preparation and of testing. This second task falls mainly in the domain of the pharmacists, the botanists and the chemists, and is better left to them, with facilities for obtaining medical advice on occasion, for instance, as to the relative therapeutic value of this or that method of preparation or vehicle, the therapeutic need of this or that standard, or the harmlessness of certain impurities. The selection of the "average doses" is naturally assigned to the physicians. Biologic assays and the "biologic products," serums, and so on, are topics for trained specialists who are often physicians.

The selection of drugs to be admitted to the Pharmacopeia must be determined primarily by their therapeutic usefulness in order that they may reflect "the best state of the medical knowledge of the day." These are medical matters, and they therefore fall within the technical province of the physicians of the revision committee. The definite recognition of this principle in the last revision contributed notably to its success and should be continued. As in that revision, it should be recognized that the policy of a national pharmacopeia should be progressive but also conservative, and constructive rather than destructive. Changes should be made where they are required by the development of modern medicine and modern pharmacy; for the Pharmacopeia should be a working manual of the present era and not an antiquarian museum. New drugs should be admitted freely when their therapeutic usefulness appears established, and some old drugs which have fallen into neglect or disrepute should be omitted so that the usable may not be lost in the obsolete; but these changes should be decided only after careful consideration of the available information, and after all members of the revision committee have had the opportunity to submit facts and to present their views. There is no need for any radical changes of policy: the policies of the present revision have earned for the Pharmacopeia "the sanction of the medical community and of the public," and may safely be continued.

To this end, the Council on Pharmacy and Chemistry urges on physicians and pharmacists alike the importance of sending to the convention sane and broadminded delegates who may come with the serious wish to work together toward constructive policies.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, SEPTEMBER 28, 1929

THE ACIDITY OF THE GASTRIC JUICE

Every one who deals with gastric contents in an analytic way is familiar with the observation that they are highly changeable in reaction. Specimens that are removed for examination are likely to show quite wide variations in acidity, ranging from an almost complete absence of "free" hydrochloric acid to a content approaching 0.4 or 0.5 per cent. Studies in the physiology of gastric secretion have made it clear that such marked differences are not due to corresponding variations in the acid strength of the fluid secreted at successive intervals by the gastric glands. Indeed, there is reason to believe that the gastric juice itself exhibits a surprising uniformity of reaction approximating 0.5 per cent. Consequently the lower values that are so commonly observed must be due to some diluting or neutralizing effects associated with events within the alimentary tract itself.

It has long been known that protein combines with acid in the stomach; hence a meal rich in protein tends to decrease the "free" acidity in proportion to the amount of albuminous matter available and the progress of digestive proteolysis. Even in the absence of a protein meal, however, the concentration of the gastric acid may be decidedly lowered. One explanation of this phenomenon, which has found wide acceptance, involves the "self-regulation of the gastric juice" in the way proposed by Boldyreff. This postulates the regurgitation of alkaline duodenal contents, notably in the form of pancreatic juice, into the stomach. In other words, fresh gastric juice is believed on this theory to be secreted into the stomach with a high concentration of free hydrochloric acid; this in turn stimulates regurgitation of duodenal alkalis into the stomach, thereby regulating the acidity of the acid contents.

This is by no means the sole possibility that presents itself. Clinical observations on man have been variously interpreted with respect to the tenability of the regurgitation hypothesis. Accordingly, considerable interest attaches to experiments on the subject by McCann[1] at the Mayo Foundation. His study was planned to determine whether the total exclusion of the duodenal secretions from beyond the pylorus by surgical methods, or the loss of pyloric alkaline mucus following resection of the antrum of the stomach, would alter the character of the response of the organ so far as the control of the acidity of the juice is concerned.

McCann's observations on animals, which have supplied most of the basis for Boldyreff's conclusions, indicate that regurgitation of the duodenal alkalis is by no means the essential mechanism for controlling the acidity of the gastric juice, though it may be an associated phenomenon. The results indicate that after the acid has stopped combining with the food, as already described, the mechanism for controlling the acidity of the juice consists probably of two factors capable of bringing the secretion to complete neutralization. The first, according to McCann, is a gradual reduction of an established high rate of secretion of the acid to a low one. The second factor appears to him to be the capacity of the constant basal secretion of mucus to combine with a constant fraction of the changing volume of acid secreted. This mucus is assumed to be derived from the adjacent mucus-secreting cells in the fundus of the stomach. When the rate of secretion of acid has fallen to the low basal rate of the resting stomach, the amount secreted is apparently so small that it combines completely with the basal mucous secretion yielding a combined acid and a neutral chloride. Such an explanation adds another specific function to the gastric mucus to which considerable importance has long been attached in less precise ways.

THE UNITED STATES PHARMACOPEIA

On page 989 of this issue, the Council on Pharmacy and Chemistry appeals to the organizations entitled to send delegates to the United States Pharmacopeial Convention to choose representatives noted for high ideals, breadth of vision, trained understanding and sound judgment. The Council's appeal is timely. Those whose duty it is to select and appoint delegates to represent their group or institution should without delay select persons fitted for the task and take steps to insure the presence of these delegates at the convention.

Although federal laws concerned with the control of the purity of drugs provide for the enforcement of drug standards set forth by the Pharmacopeia, the book is not published by or under the control of the federal government. It is published by authority of the United States Pharmacopeial Convention. This body is composed of members who are sent as delegates by national or state associations of physicians, pharmacists and other groups concerned with medicine and drugs, by schools of medicine and of pharmacy, and by certain

1. McCann, J. C.: Studies on the Control of the Acidity of the Gastric Juice, Am. J. Physiol. **89**: 483 (Aug.) 1929.

government services. The convention meets once every ten years, and its chief function is the selection of the Committee of Revision of the United States Pharmacopeia. To this committee is assigned the task of making any desired changes in the Pharmacopeia then in force and of issuing a revised edition of the book. The next Pharmacopeial Convention has been called for May 13, 1930, at which time the delegates appointed by the constituent bodies will meet in Washington, D. C., and inaugurate the preparation of the next, the eleventh, revision of the United States Pharmacopeia.

Originally the revision of the Pharmacopeia was controlled exclusively by physicians, the Council explains, but as the pharmaceutic problems increased in magnitude the pharmaceutic profession was taken into equal partnership. With the progressive evolution of scientific pharmacy, and especially with the introduction of more scientific standards and tests, the major share of the technical work of the revision fell on the pharmaceutic members, who therefore justly became numerically preponderant in the "Revision Committee." At that time—the period when instruction in medical schools in subjects related to therapy and drugs was wofully deficient, and when conditions made necessary the establishment by the American Medical Association of its Council on Pharmacy and Chemistry—the Pharmacopeia promised to degenerate into a mere book of standards for drug control officers. Then, in 1916, when the ninth revision of the Pharmacopeia had just made its appearance, THE JOURNAL (Sept. 2, 1916, p. 750) pointed out that the Pharmacopeia was a book of standards for drugs but not a book of standard remedies: that the book included substances which had been shown to be inert, complex and obsolete mixtures, and drugs which had been tried and found wanting; that it contained much matter of little interest to the physician and entirely foreign to scientific medicine. Largely as a result of the renewed interest in scientific drug therapy which was created by the reports of the Council on Pharmacy and Chemistry and the publications and teaching of its members as individuals, so much interest was taken in the following revision of the Pharmacopeia that medical members of the revision committee were in effect put in charge of the scope of the book at the convention held in 1920. They were delegated to decide which of the drugs in the ninth revision were to be retained in the tenth and which were to be omitted as being of insufficient usefulness.

With the principle of additions and deletions thus secured, and with the question of additions made relatively simple by the probationary term which new drugs serve in New and Nonofficial Remedies, the tenth revision of the Pharmacopeia became a book with which both physicians and pharmacists may justly be satisfied. In order that the next revision may correctly reflect the advances achieved in drug therapy during the last ten years, the medical and other bodies entitled to send delegates to the coming convention should give serious consideration to the appeal of the Council on Pharmacy and Chemistry. Those who are sent as delegates should have the sane broad-mindedness necessary for carrying on the constructive policies that have made for the success and usefulness of the last revision of the Pharmacopeia.

THE GENESIS OF ICTERUS NEONATORUM

Icterus is present to some extent in nearly all newborn infants. This statement is not intended to imply the necessary occurrence of characteristic yellow coloration of the skin, mucous membranes and fluids of the body with bile pigment, but rather an increase of the latter in the blood plasma over what may normally be expected somewhat later. The conception of such possibilities has been greatly modified by demonstrations that the bile pigments have an extrahepatic origin, the liver serving primarily as an organ for their excretion into the bile. Before the establishment of this fact it was not so easy to conceive of icterus neonatorum as having other than hepatogenous origin. Today the hematogenous possibilities are well established. The old dictum "no icterus without liver" is no longer tenable. Hemolytic jaundice has a well founded experimental basis with abundant proof that the bile pigments can be formed in the body outside the liver from liberated blood pigment.

It has become timely, therefore, to consider the genesis of icterus in the new-born from these points of view. Recent studies by Goldbloom and Gottlieb [1] at the Royal Victoria Hospital in Montreal have established certain features that may lead to more definite conclusions. According to their observations, umbilical blood hemolyzes, on standing in a test tube, far more rapidly than does adult blood. There is a marked increase in the fragility of the erythrocytes of cord blood, and likewise in the peripheral blood of infants. The resistance to disintegration returns to normal within about a week after birth. Goldbloom and Gottlieb found in both cord blood and the peripheral circulating fluid of the infants an increase in the number of immature red cells, reticulated forms and nucleated cells. The disappearance of these forms from the circulation was found to coincide with the return of the fragility to normal. Hemolysin could not be detected in the infant's serum. The sensitive van den Bergh test showed an increase of bilirubin in the cord serum and peripheral blood of all infants examined, sometimes to the extent of producing visible icterus.

The Montreal investigators have reached the conclusion, from the foregoing observations, that icterus neonatorum is a physiologic condition which is the result of a postnatal readjustment from an environment requiring the presence of polycythemia for the

1. Goldbloom, Alton; and Gottlieb, Rudolph: Icterus Neonatorum, Am. J. Dis. Child. **38**: 57 (July) 1929.

maintenance of oxygenation to one in which no such extraordinary measures are necessary. Icterus, they contend, is present in all infants at the early age, visibility being only a matter of degree. The fetus lives in a condition of continual oxygen want, so that the bone marrow is stimulated with resulting increase in the number of red cells produced. After birth, anoxemia no longer exists; the necessity for polycythemia then ceases, and the excess of red cells is destroyed; hence the icterus.

REFLEX ANTIBODY PRODUCTION

Clinical immunology is a carefully thought out and conscientious attempt to apply theories of immunity to the diagnosis, prevention and cure of infectious diseases and allied clinical conditions. In a recent article, Manwaring and Krueger [1] estimated that during the last three decades no theory of immunity has assayed more than 5 per cent clinically verifiable truth. They attribute the discouraging history of vaccine and of serum therapy to this 95 per cent clinical fallibility. Recognizing this clinical fallibility, theoretical immunologists are directing an increasing amount of time and attention to the formulation and attempted verification of new or improved basic immunologic theories. It is suggested, for example, that specific antibodies may be specifically altered tissue enzymes, or antibody "enzymates." [2] It is also conceived that so-called antibodies may be but "hybrid protein retention products" formed by conjugation or other interaction between injected antigens and normal humoral proteins.[3] Hypotheses of this type try to explain antibody formation on a purely chemical basis.

One of the more complex functional hypotheses to receive attention is a revival of the almost forgotten antibody theory of Pfeiffer, who pictured antibodies as reflex specific internal secretions resulting from a chemically specific antigen irritation of sensory nerve fibers or nerve endings. In a fairly recent communication Friedberger [4] concluded that there is a sufficient element of truth in this ancient theory to warrant its experimental review. Alleged confirmatory evidence has just been published by Siegler,[5] who reports a distinct reduction in subsequent antibody production as a result of a temporary therapeutic paralysis of local vasomotor or sensory nerves at the sites of antibody injection, the injected area being immediately excised to prevent the entrance of the antigen into the circulation. Siegler characterizes the resulting apparently reflex specific antibody production as "contact immunity." While Siegler's experiments are not conclusive, numerous alternate explanations of his apparently reflex specific immunity being possible, the fact that several competent immunologists are at present attempting serious experimentation on such purely hypothetic neurophysiology emphasizes the inadequacy of currently accepted immunologic theories.

The practical importance of such theoretical experimentation lies in the fact that certain recently suggested antibody theories [3] would render illogical many if not most of the clinical immunologic methods of the last quarter century, would logically explain the clinical failure of so many commercially exploited vaccines, antiserums and diagnostic methods, and would point the way to numerous new, improved and thus far untried methods of therapeutic attack.

1. Manwaring, W. H., and Krueger, A. P.: Laboratory-Endorsed Therapeutic Agents: Mathematical Calculation of Their Probable Clinical Value, J. A. M. A. **93**: 95 (July 13) 1929.

2. Sdrawosmisslow, W. H., and Kostromin, N. E.: Über die fermentative Methode der Diphtherieantitoxinerhaltung in Vitro, Ztschr. f. Immunitätsforsch. **54**: 1 (Dec.) 1927.

3. Manwaring, W. H.: Protein Hybrids and Symbions, read at the Portland Session of the American Medical Association, July 12, 1929.

4. Friedberger, E.: Der Einfluss des parenteralen Antigendepots auf die Antikörperbildung, Ztschr. f. Immunitätsforsch. **33**: 306 (Dec.) 1921.

5. Siegler, J.: Einfluss der Temperatur auf die Kontaktimmunität beim Kaninchen, Ztschr. f. Immunitätsforsch. **62**: 352 (July) 1929.

Current Comment

ELECTROCARDIOGRAPHIC LOCALIZATION OF THE SITE OF CARDIAC INFARCTION

In 1919, J. B. Herrick [1] wrote in THE JOURNAL: "The thought has been that if it can be proved that with a certain artery obstructed there is a definite lesion in the heart muscle or in the conducting system, and if with that lesion there is a definite electrocardiogram, may we not, when we encounter that abnormal electrocardiogram in the human being, particularly if he has had symptoms suggestive of coronary thrombosis, be able to state with a reasonable degree of certainty that the patient has had obstruction in a particular portion of the coronary system? May it perhaps be possible to localize a lesion in the coronary system with an accuracy comparable to that with which we locate obstructive lesions in the cerebral arteries?" In the interval since 1919, F. M. Smith, Pardee, and Parkinson and Bedford have made major contributions toward an answer to Herrick's prophetic questions. Recent work by Barnes [2] and Whitten,[3] however, seems to have furnished the definite affirmative answer. These investigators have made a combined anatomic, pathologic and electrocardiographic study. Infarction of the right ventricle they found to be exceedingly rare, but they identified a type of electrocardiogram which is found in cases of infarction of that part of the anterior portion of the left ventricle which is usually supplied by the left coronary artery. Another type of electrocardiogram is associated with infarction in that part of the posterior portion of the left ventricle which usually is supplied by the right coronary artery. The changes are noted primarily in the R-T interval of the electrocardiogram. Barnes and Whitten believe that the portions of the left ventricle which are supplied respectively by the right and by the left coronary arteries exert opposing elec-

1. Herrick, J. B.: Thrombosis of the Coronary Arteries, J. A. M. A. **72**: 387 (Feb. 8) 1919.

2. Barnes, A. R.: Electrocardiographic Changes in Myocardial Infarction, Proc. Staff Meet. Mayo Clinic **4**: 132 (April 24) 1929.

3. Whitten, M. B.: The Coronary Circulation as Related to Myocardial Infarction, Proc. Staff Meet. Mayo Clinic **4**: 130 (April 24) 1929.

trical effects on the R-T interval and that, as far as these electrical effects are concerned, the left ventricle is divided by a plane that corresponds fairly closely with the division between the usual distribution of the right and the left coronary arteries. Aside from the value of this knowledge in the diagnosis of infarction, future experience may enable the physician to give a more accurate prognosis of an attack of coronary occlusion than heretofore has been possible.

REGENERATION OF THE LIVER

Some of the lower forms of animal life have a noteworthy advantage over man and the higher animals in that the less highly organized types in many instances possess a power of regeneration and restoration of lost tissues or even organs to a remarkable degree. Thus, a lost appendage corresponding to a human limb may be replaced with apparent biologic readiness. In man such restoration never occurs; and regeneration is at best confined to a few tissues. Lost muscle or excised portions of the central nervous system are never replaced by renewal of their characteristic growth, though the nerves may be regenerated. The epithelial and connective tissues, on the other hand, retain the potency of restitution to a considerable extent. Lost skin is restored by restitutive growth, so that a continuity of the protective epidermis or alimentary mucosa may readily become reestablished after a denuding injury. To what extent, if any, restoration of lost tissue occurs in the case of glandular epithelium has not been so clear. There are investigators who insist that reformation of a glandular organ does not take place in man. A reinvestigation of the problem has been made possible in the case of the largest glandular structure in the body, the liver, by means of the newer methods of experimental surgery, which permit excision of large portions or even the entire hepatic tissue without immediate death. Applying the procedures as they have been developed by F. C. Mann at the Mayo Foundation, Fishback [1] has demonstrated that when from one fifth to three fourths of the liver has been removed from an experimental animal there is an equivalent restoration of tissue in six or eight weeks. The process is not one of regeneration in the strict sense of replacement of tissue at the site of the removal. The pedicle does not regenerate. Restoration takes place within remaining lobes, which hypertrophy until they attain at least four-fifths the size and weight of the original liver. There is an intense and rapid multiplication of hepatic cells. Perhaps the process should be called compensatory hyperplasia. At any rate there is no hypertrophy of the lobules during the regenerative change, but they undergo a hyperplastic budding process at their periphery, productive of new lobules so similar in size and shape that they cannot be distinguished from the old ones. There is here an analogy to the embyonic development of the liver. Fishback avers that the liver appears to possess an infinite capacity for regeneration. The remaining part of the liver responds as rapidly and completely after a second or third partial hepatectomy as after the first.

1. Fishback, F. C.: A Morphologic Study of Regeneration of the Liver After Partial Removal, Arch. Path. **7**: 955 (June) 1929.

THE SITE OF FORMATION OF BILE PIGMENT

Until a few years ago a discussion of the site of the formation of the characteristic biliary pigment would doubtless have been limited largely to consideration of the liver. Although isolated instances of the extrahepatic production of substances like bilirubin, notably that represented by the occurrence of hematoidin in tissues around old hemorrhages, were recorded as early as the middle of the nineteenth century, they were not classed in the category of normal physiologic activity. The appreciation of the now well established fact that bilirubin is by no means ordinarily confined in its origin to the liver is of comparatively recent date.[1] Its derivation from the blood pigment hemoglobin is unquestioned. Accurate methods of analysis, such as the van den Bergh reaction affords, have greatly promoted our knowledge of the genesis and fate of the bile pigment. At the Mayo Foundation, Mann and his co-workers [2] demonstrated not long ago that more bilirubin is present in the blood of vessels issuing from the spleen and bone marrow than in the arteries supplying these organs. The comparative contribution of the latter was investigated in animals after removal of the spleen, the liver, or all of the abdominal viscera. The conclusion was reached that although bilirubin is made in both the spleen and the liver, the amount is insignificant in comparison with that originating in the bone marrow. In the same laboratories, Haldeman [3] has lately further pursued the problem of the site of formation by the application of histologic methods of study. He argued that, since iron is liberated in the breaking down of hemoglobin into bilirubin, it is reasonable to conclude that the cells that contain iron in relative abundance have presumably been concerned in the transformation, or at least in the genesis, of a precursor of bilirubin. Accordingly, Haldeman has observed that the intravenous injection and corresponding widespread distribution of hemoglobin is often followed quite early by a striking increase of the iron in the reticular cells of the bone marrow, and occasionally by a moderate increase of such material in the stellate cells of the liver. The conclusion is reached that the bone marrow plays the major part in the formation of bilirubin, with the liver, spleen and possibly the lymph nodes having a lesser part in this process. The local formation of the pigment in isolated areas is attributed to connective tissue macrophages or histiocytes. It will be noted that all of these cell groups are a part of the reticuloendothelial system, which has achieved prominence in the histology of the present day.

1. Recent reviews of the literature on the formation of bile pigments have been given by:
Whipple, G. H.: The Origin and Significance of the Constituents of the Bile, Physiol. Rev. **2**: 440 (July) 1922.
McNee, J. W.: Jaundice: A Review of Recent Work, Quart. J. Med. **16**: 390 (July) 1923.
Rich, A. R.: The Formation of Bile Pigment, Physiol. Rev. **5**: 182 (April) 1925.
Mann, F. C.: The Site of Formation and Source of Bilirubin, Arch. Path. **2**: 516 (Oct.) 1926.

2. Mann, F. C.; Bollman, J. L.; Sheard, C., and Baldes, E. J.: The Site of the Formation of Bilirubin, Am. J. Physiol. **74**: 49 (Nov.) 1925. Mann, F. C.; Sheard, C., and Bollman, J. L.: An Evaluation of the Relative Amounts of Bilirubin Formed in the Liver, Spleen and Bone Marrow, ibid. **78**: 384 (Oct.) 1926.

3. Haldeman, K. O.: A Histologic Study of the Formation of Bile Pigment, Arch. Path. **7**: 991 (June) 1929.

Association News

TIME OF DETROIT ANNUAL SESSION

The Board of Trustees of the American Medical Association has selected June 23 to 27, 1930, as the time for the next annual session, to be held in Detroit.

ANNUAL CONFERENCE OF SECRETARIES OF CONSTITUENT STATE MEDICAL ASSOCIATIONS

The Annual Conference of Secretaries of Constituent State Medical Associations will be held in the auditorium of the headquarters of the Association at 535 North Dearborn Street, Chicago, Nov. 15 and 16, 1929.

ABSTRACT OF MINUTES OF MEETINGS OF BOARD OF TRUSTEES HELD IN CHICAGO, SEPT. 19 AND 20, 1929

Meetings of the Board of Trustees were held in Chicago, Thursday and Friday, September 19 and 20.

The minutes of the meetings of the Board held during the annual session in Portland and of the last meeting of the Executive Committee, held on August 30, were approved.

DEATH OF DR. CHARLES W. RICHARDSON

The following resolution, prepared by a committee of three appointed by the Board, was adopted and ordered spread on the minutes and sent to the family of Dr. Richardson:

The Board of Trustees of the American Medical Association, at their regular session in Chicago, Sept. 19 and 20, 1929, note with sorrow the absence, through death, of their fellow member, Dr. Charles Williamson Richardson. He was faithful to his trust, loyal to the Association, and sacrificing of himself for the good of scientific medicine and of the medical profession. In the sessions of the Board, the advice of Dr. Richardson was always sound, his counsel thoughtful, his consideration for the views of others appreciative and respectful. As a friend, he was loyal and considerate. The members of the Board miss him now, and will always cherish his memory.

DATE OF DETROIT SESSION

June 23-27, 1930, was selected as the date for the annual session of the Association to be held in Detroit.

RESIGNATION OF DR. DARRACH FROM COMMITTEE ON THE GRADING OF NURSING SCHOOLS

Dr. William Darrach's resignation from the Committee on the Grading of Nursing Schools was accepted by the Board, which expressed its appreciation of the service rendered.

ROYALTIES ON BOOKS

It was decided to pay royalties on books published by the Association.

PERPETUAL SUBSCRIPTIONS

The Board expressed itself as being opposed to perpetual subscriptions and, therefore, decided against making arrangements for the acceptance of such subscriptions.

SECRETARIES' CONFERENCE

November 15 and 16 were set as the dates for the annual Conference of State Secretaries.

COMMITTEE TO COOPERATE WITH THE AMERICAN BAR ASSOCIATION

The following committee was appointed to cooperate with a similar committee of the American Bar Association to make a study of crime: Dr. H. Douglas Singer, Chicago, chairman; Dr. Winfred Overholser, Boston, and Dr. William C. Woodward, Chicago.

PROPOSED CHANGE IN CALENDAR

The Board expressed itself as not being in favor of the proposed change in the calendar, since it would result in serious complications and would require many readjustments which, in its judgment, would not be outweighed by the benefits that would ensue.

DELEGATES TO THIRD INTERNATIONAL CONGRESS OF RADIOLOGY

The recommendation of the Section on Radiology for the appointment of a delegate to the Third International Congress of Radiology was approved. Dr. Albert Soiland of Los Angeles was appointed delegate, and Dr. W. E. Chamberlain of San Francisco, alternate.

REPRESENTATIVE AT DEDICATION OF INSTITUTE OF PATHOLOGY OF WESTERN RESERVE UNIVERSITY

Dr. J. H. J. Upham of Columbus was designated to represent the Association at the dedication of the new building of the Institute of Pathology of the Western Reserve University, Oct. 7, 1929.

NEW MACHINERY

Authorization was given for the purchase of a new press and of a new linotype machine.

REPORT OF COMMITTEE ON SCIENTIFIC EXHIBIT

The Committee on Scientific Exhibit presented a lengthy report, which was adopted by the Board. Among the recommendations contained therein were: the reappointment of Drs. Blumer and Hanzlik to the Advisory Committee for a term of three years; the publication in pamphlet form, for general sale, of the illustrated material distributed during the last three years by the Cooperative Committee on Fractures, and the transfer of the motion picture theater from the Committee on Scientific Exhibit to the Committee on Visual Education.

INCREASE IN PRICE OF THE JOURNAL

The Board voted to increase the price of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION to $7 a year, to take effect, Jan. 1, 1930, with a view to meeting the increased operating expenses and at the same time maintaining the high quality of the periodical.

ELECTION OF DR. THOMAS S. CULLEN TO SUCCEED DR. CHARLES W. RICHARDSON ON BOARD OF TRUSTEES

Dr. Thomas S. Cullen of Baltimore was elected to membership on the Board of Trustees to serve until the next meeting of the House of Delegates, to succeed Dr. Charles W. Richardson, deceased. This action was taken in accordance with the provisions of chapter VI, section 1, of the By-Laws, which reads:

Should a vacancy occur, on account of death or otherwise, among the general officers of the Association, the Board of Trustees may fill such vacancy until the next annual session of the House, unless otherwise provided for in this Constitution and By-Laws.

Other routine business was transacted, after which the Board adjourned sine die.

MEDICAL BROADCAST FOR THE WEEK

The American Medical Association Morning Health Talks and Evening Health Hints from Hygeia

The American Medical Association broadcasts daily at 10 in the morning, central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week of September 30-October 5 is as follows:

September 30. "Your Child's Nurse," by Miss Mildred Whitcomb.
October 1. "The Danger of Measles," by Dr. R. G. Leland.
October 2. "Medical News," by Dr. J. F. Hammond.
October 3. "The Nature of Cancer," by Dr. R. G. Leland.
October 4. "Following the Sunshine," by Mr. Cecil Bean.
October 5. "Your Son Enters College," by Miss Lois Stice.

Evening Health Hints from Hygeia, 8 o'Clock, Central Standard Time

September 30. Boys' and Girls' Rules for Health.
October 1. Foot Facts.
October 2. Carbon Monoxide Menace is Ever Present.
October 3. Best Students Excel in Sports.
October 4. Chronic Irritation May Lead to Cancer.
October 5. Health Depends on Rest.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Society News.—Dr. Salvatore R. Monaco, Los Angeles, has been made president of the International Medical Club of Southern California for the ensuing year, and Dr. Abraham J. Gottlieb, 727 West Seventh Street, Los Angeles, secretary. The club has been organized for five years, the object being to promote better understanding between medical men of different nationalities and to create an opportunity for social contact.——The health officers' section of the League of California municipalities will meet at Oakland, October 7-11.

University News.—The University of California and Stanford University have made plans whereby the Herzstein lectures and the Lane lectures will alternate this fall. The object of both lecture foundations is to bring to California outstanding authorities in medicine, so that local physicians may have an opportunity to hear them. Dr. Morris Herzstein left $20,000 to the University of California to endow lectures, as well as the residue of his estate; $100,000 of the sum is to be used to endow a chair of biology.——The University of California has granted short leaves of absence to Drs. Howard E. Ruggles, clinical professor of roentgenology; James L. Whitney, assistant clinical professor of medicine, and Ralph Rabinowitz, associate clinical professor of medicine.

Gift for Research in Germany.—Mrs. Louise Kerckhoff, Los Angeles, is reported to have turned over to the municipality of Bad Nauheim, Germany, September 16, an endowment fund of $1,080,000 to be used to build and maintain an institution for research in heart diseases. Bad Nauheim is a spa frequented by many Americans. The gift is a memorial to the husband of the donor. Its expenditure will be supervised by a committee consisting of four members of her family, Professor Groedel, who will direct the new institution, and representatives of the universities at Frankfort and Giesen, and of the technical high schools at Darmstadt and Nauheim. According to the New York *Times,* half the gift will be used to endow scholarships. The new institution will comprise a department of experimental pathology and therapeutics, a department for public instruction on heart disease, a department of statistics, and a department for the examination of patients who are subjects of social insurance.

FLORIDA

State Health Officer Appointed.—Governor Carlton announced, September 7, the appointment of Dr. Henry Hanson, Jacksonville, as state health officer of Florida to succeed Dr. Burdett L. Arms, resigned. Dr. Hanson is a native of South Dakota where, after graduating from the state university in 1902, he was laboratory assistant in chemistry. He graduated from Johns Hopkins University Medical School in 1908, then was assistant superintendent of the Milwaukee County Hospital and assistant pathologist at the Marquette University Medical School. He later came to Florida to take charge of the laboratory of the state board of health, from which he resigned in 1916 to enter private practice in Jacksonville. After serving in Panama during the World War he undertook a sanitary survey of the coast of Peru, where for a short time in 1922, the *Jacksonville Journal* says, he was director of the Peru Health Department. He served for the Rockefeller Foundation in Central America, Colombia, Venezuela, and with the yellow fever commission in East Africa. He came to Florida as district health officer in 1927. Dr. Hanson is a past president of the Duval County Medical Society.

ILLINOIS

Courses for Social Workers.—The Illinois Conference on Public Welfare will give eight short courses of instruction for social workers during the annual meeting of the conference at Evanston, October 28-29. Among the subjects will be "Family Relationships in Mental Hygiene," "Fundamentals of Child Health" and "Legal Aspects of Social Work." Applications should be addressed to Mary E. Murphy, 848 North Dearborn Street, Chicago.

Society News.—The Clinton County Medical Society, Carlyle, was addressed, September 10, among others, by Dr. Ethel R. Harrington, Chicago, on "Maternal and Infant Hygiene Problems."——The Schuyler County Medical Society held a special meeting, September 26, at Rushville, to which physicians of Illinois, Iowa and Missouri were invited. The guest speakers included Dr. William D. Chapman, Silvis, president elect, Illinois State Medical Society, on obstetrics, and Dr. James H. Hutton, president elect, Chicago Medical Society, on "Endocrine Disturbance Occurring in General Practice."——Dr. Harry M. Hedge, Chicago, addressed the Iroquois County Medical Society, September 19, on "Some Common Skin Diseases."——The Whiteside County Medical Society, Sterling, was addressed, September 27, by Dr. Eugene B. Perry, Chicago, on "Results of Obstruction of the Lower Urinary Tract."

Personal.—Dr. Jesse M. Hoyt, Nokomis, has resigned as district health inspector with the state health department.——Governor Emmerson has appointed Dr. Charles J. Carlin, Joliet, physician to the old state penitentiary in that city to succeed Dr. John Shutack and has appointed Dr. Oscar J. Hagebush, Ashley, as managing officer of the Anna State Hospital.——Dr. William A. Stoker has tendered his resignation as managing officer of the Kankakee State Hospital to Governor Emmerson.——Dr. Robert M. Hathaway has resigned his position with the Pulaski County Health Department after several years' service, and will engage in practice in Hamilton.——The state board of medical examiners, comprising Drs. Malcolm L. Harris, Gilbert Fitzpatrick, Wilbur H. Gilmore and Arthur H. Geiger of Chicago, and John R. Neal, Springfield, has been reappointed for another term.——Dr. Rush E. Castelaw, Kansas City, Mo., has been appointed superintendent of the Decatur and Macon County Hospital. Dr. Castelaw for twelve years was head of the Wesley Hospital in Kansas City, having retired from that position last June.——Dr. Otis O. Stanley, Decatur, has been elected president of the Macon County Tuberculosis and the Visiting Nurses' Association for the ensuing year.——Dr. Phillip S. Waters has been appointed managing officer of the Alton State Hospital, succeeding Dr. Joseph H. Ellingsworth, resigned. Dr. Waters was formerly assistant managing officer of the hospital.

INDIANA

Society News.—The child guidance clinic at the Indiana University School of Medicine, Indianapolis, has begun operation. A clinic for adult outpatients is conducted at Long Hospital, Tuesday afternoons, and for children at the Riley Hospital on Fridays. Patients are referred to the clinic by physicians, courts and social agencies with which the departments of medicine, pediatrics and psychology at the university cooperate. The clinic will be in operation for two years. Dr. Helen P. Langner is the director.

Injunction Sought Against Operator of Bath.—At the request of the state medical society an injunction suit was filed at Huntington, September 14, alleging that one Joseph B. Miller has been engaged in the practice of medicine without a license in that city and that he has sent notices of his practice throughout the county. The complaint asks the court to enjoin Miller from further practice until he has obtained a license. Miller, it is said, used steam baths in his method of treatment and claims to cure external and internal ailments.

State Medical Meeting at Evansville.—The annual meeting of the Indiana State Medical Association at Evansville, September 25-27, was addressed by the following guests: Drs. John Shelton Horsley, Richmond, "Modern Methods of Preoperative and Postoperative Treatment in Surgical Cases"; Edward C. Mitchell, Memphis, Tenn., "Vomiting Problems in Children"; Elliott P. Joslin, Boston, "The Abolition of Diabetic Coma in the United States"; Francis E. Senear, Chicago, "Cutaneous Tuberculosis and General Medicine"; Frank H. Lahey, Boston, "The Management of Goiter"; Sumner L. S. Koch, Chicago, "Treatment of Acquired Contractures of the Hand"; Meyer Wiener, St. Louis, "Some Points on Cosmetic Surgery of the Eye," and Joseph A. Stucky, Lexington, "Some Unsolved Problems in Ophthalmology and Otolaryngology." Dr. Arthur J. Cramp, director, Bureau of Investigation, American Medical Association, addressed the woman's auxiliary on "Mrs. Gullible's Travels in Cosmetic Land."

Report of Publicity Committee.—The bureau of publicity of the Indiana State Medical Association has been established seven years and its newspaper releases continue to receive wide distribution. The committee says in its report to the house of delegates that requests come for them from other states and from Europe. The Colorado State Medical Society sent its newly appointed executive secretary to study the work of the bureau of publicity of the Indiana State Medical Association.

The releases prepared for the press by the bureau are sent to 250 newspaper and magazine editors, to several press associations, to the state university, to the state nurses' board, to each councilor and secretary of county medical societies and to other organizations. The committee now comprises Drs. William N. Wishard, Charles P. Emerson and John A. MacDonald. They meet at the association's headquarters in Indianapolis, devoting from one to three hours every week to preparing publicity material. Among the groups that have requested the assistance of the bureau were the Committee on the Cost of Medical Care, the Indiana State Tuberculosis Association, the National Hospital Day officials, the Indiana Health Council, the Indiana Parent-Teachers' Association, the National Child Health Week committee and other health campaign officials. Since the house of delegates two years ago authorized the bureau to confer with similar committees appointed by volunteer health agencies in matters pertaining to their work, the bureau has refused to sanction many requests for the establishment of free baby clinics and for several group advertising campaigns. Its attitude in every instance was to point out that the approval of the county medical society should be obtained and that its name and not the name of any individual physician should be used in promoting health weeks, health demonstrations and other hospital campaigns. The total expense of the bureau for the year ending August 1 was $460.33, which was considerably under the amount allotted by the budget committee.

IOWA

Film for Use of County Societies. — The Iowa State Department of Health announces that it has a movie film, "Many Happy Returns" which it will send without charge for the use of county medical societies and other health organizations. The film illustrates the method of making a physical examination and the benefits accruing therefrom. It fits any standard machine.

Personal.—According to the New York *Times*, Dr. Frank L. Williams, Des Moines, was awarded an oak leaf cluster by the war department, September 12, for "extraordinary heroism in action when serving as first lieutenant with the one hundred and sixty-eighth brigade, forty-second division, near Chateau Thierry, France, July 26-28, 1918." Dr. Williams is said to have been awarded the Distinguished Service Cross in 1918 for heroism in action east of Rheims and near the River Ourcq, northwest of Chateau Thierry, July 15-29, 1918.

Society News.—Twenty-eight towns in Iowa had public water supplies which were unsafe for drinking purposes, according to a chart of the state health department exhibited at the state fair.——The Canti Cancer Film was presented before the Upper Des Moines Medical Society, Arnold's Park, August 8, through the courtesy of the American Society for the Control of Cancer. Among the speakers at the afternoon session were Dr. Edwin B. Rentschler, Rochester, Minn., whose subject was "Arthritic Pain in Relation to Weather Changes"; Dr. Robert H. McBride, Sioux City, "Nutrition in Childhood"; Dr. Anthony V. Partipilo, Chicago, moving picture demonstraction of a closed aseptic method of gastro-intestinal anastomosis, and Dr. Channing G. Smith, Granger, and Vernon D. Blank, Des Moines, "Legislative Activities." At the banquet, Senator F. C. Gilchrist, Laurens, spoke on legislative problems related to medical progress. There were dry clinics, demonstrations and papers by Iowa physicians.

MINNESOTA

Health at Duluth.—Telegraphic reports to the U. S. Department of Commerce from sixty-two cities, with a total population of about 29,000,000, indicate that the lowest mortality rate (4.9) for the week ending September 14 was for Duluth, and that the mortality rate for the group of cities as a whole was 10.2. The mortality rate for Duluth for the corresponding week last year was 11.6 and for the group of cities, 11.2. The lowest infant mortality rate for that week was also for Duluth which reported no infant mortality. The annual rate for sixty-two cities for the thirty-seven weeks of 1929 was 13.3 as compared with 13 for the corresponding weeks of 1928.

Society News.—A clinic for the examination of Minnesota Indians was held the first half of September at Cass Lake. Indians throughout the state were examined by five clinicians whose recommendations for treatment would be administered by local reservation physicians.——The following, among other members of the recent International Physiological Congress which met in Boston, will lecture at the Mayo Foundation in Rochester: September 26, Prof. Z. A. Orbeli, professor of physiology, Medical Institute, Leningrad, "Studies on the Function of the Sympathetic System"; October 3 and 4, Prof. Leon Asher, director, Physiological Institute, Berne, Switzerland, (*a*) "New Facts on the Physiology of the Thyroid Gland"; (*b*) "The Action of Specific Diuretics and the Secretion of Urine Under Physiologic Conditions"; October 7 and 8, Prof. Karl Thomas, director, Physiological-Chemical Institute, Leipzig, (*a*) "Metabolism of Food and Tissue Protein"; (*b*) "Constitution of Proteins"; October 7 and 8, Prof. Friedrich Verzar, professor of physiology, University of Debreczen, Hungary, (*a*) "The Influence of Nutrition on Internal Secretion"; (*b*) "The Hormonic Regulation of the Number of Red Blood Corpuscles."——Dr. Henry C. Cooney, Princeton, was made president of the Northern Minnesota Medical Association at its recent annual meeting, and Dr. Oscar O. Larsen, Detroit Lakes, secretary, reelected.——Dr. Omer C. Rathman, Rochester, has been granted leave of absence from the Mayo Foundation until May 1 in order to be at the Lying-In Hospital, New York, for the next eight months.——The Minnesota Surgical Society held its first quarterly meeting at Duluth, September 14; the forenoon was spent attending clinics at St. Mary's Hospital. The winter meeting will be held at Rochester and the spring meeting at St. Paul.——The Minnesota Academy of Medicine at a regular meeting, September 25, at the Town and Country Club, was addressed by Dr. Rae T. LaVake on "The Rectal Examination and the Concealed Stage of Labor."

MISSISSIPPI

Health Officer Has Undulant Fever.—Dr. Felix J. Underwood, Mississippi state health officer, has been confined to a hospital since June, the New Orleans *Times Picayune* says, with an ailment which has been diagnosed as undulant fever.

Society News. — At a meeting, September 4, the Jones County board of supervisors voted to discontinue the county health work. Dr. Hardie R. Hays, county health officer, recently tendered his resignation on account of ill health.—— The Pike County Medical Society has petitioned the county board of supervisors to make an appropriation for a full-time county health unit for 1930.——The annual contribution of the Elks to the Biloxi Hospital received from their celebration, July 4, amounted this year to about $2,900.

Dr. Strong Appointed Professor of Pediatrics. — The dean of Tulane University of Louisiana School of Medicine, New Orleans, announced, September 7, that Dr. Robert A. Strong of Pass Christian had been appointed professor and head of the department of pediatrics, effective at the opening of the fall term. Dr. Strong is a graduate of Tulane and formerly practiced in New Orleans. He served during the World War, and formerly taught in the pediatric department of Tulane. Dr. Strong succeeds Dr. Laurence R. DeBuys, who resigned after eight years' service to devote his time to practice.

NEBRASKA

Meeting of Food Officials. — The Association of Dairy, Food and Drug Officials of the United States held its thirty-third annual convention at Lincoln, September 23-27. J. O. Clarke, chief of the central inspection district, food, drug and insecticide administration, discussed the marketing of poultry culls. Last year more than a quarter of a million pounds of culls was seized as unfit for human consumption. Congress is considering legislation which would extend government inspection to fowls at the time of slaughter in a manner similar to the present inspection of meats. The discrepancies between the claims in advertisements and on the labels of some foods and drugs were discussed by I. L. Miller of the Indiana State Board of Health. A paper was presented by A. M. G. Soule of the state department of agriculture, Augusta, Maine, on "Sanitation of Roadside Markets and Stands," and a paper on "Undulant Fever" by Dr. Samuel J. Crumbine of the American Child Health Association, New York.

NEVADA

Impostor's License Revoked.—At a meeting of the state board of medical examiners at Reno, the license to practice in Nevada, issued in 1927 in the name of A. B. Cheatham, was revoked on account of fraud. A man representing himself as Arnell Boyd Cheatham applied to the board for a license to practice medicine, filing a diploma from Memphis Medical College, dated in 1907. He made an affidavit to the effect that he was the person graduated from the school at that time, and was admitted to the examination, which he passed satisfactorily. It was found subsequently that he was an impostor. The A. B. Cheatham who graduated from Memphis Medical College in 1907 has for many years been practicing in Millersville, Texas, and never made application for license to practice in Nevada. An attorney on behalf of the impostor appeared before the board and voluntarily surrendered the license.

NEW YORK

Society News. — The Medical Society of the County of Albany was addressed, September 25, by Dr. Huntington Williams of the state department of health on "Probable Cyanide Poisoning from Silver Polish in Hotels and Restaurants," and by Dr. Erastus Corning, Albany, vice president of the society, on "Scleroderma."——The Medical Society of the County of Nassau was addressed by Dr. Louis R. Welzmiller and Mr. Nestor Matson, September 24, on hypnotism, including a practical demonstration; Dr. Alfred E. Shipley spoke on "The County Medical Society and Public Health Activities."

Physicians' Names on Actors' Cards. — The National Vaudeville Artists dedicated a new $750,000 sanatorium at Saranac Lake, September 15, for the treatment of tuberculosis among its members. It will be operated under the general direction of Dr. Edgar Mayer. For the dedication vaudeville stars came up from New York in a special train. The president of the National Vaudeville Artists this year, Eddie Cantor, is reported to have said that members of the organization will contribute one day's pay for the support of the sanatorium, and will have on their membership cards the addresses of physicians in New York, Chicago and "on the coast," so that they may avail themselves of expert medical advice at any time. The sanatorium at Saranac Lake is situated on a 40 acre tract on a peak which overlooks the surrounding country.

New York City

First Harvey Lecture. — Dr. Ernst Pick, professor of pharmacology, University of Vienna, Austria, will deliver the first Harvey lecture at the New York Academy of Medicine, Thursday evening, October 3, on "The Regulation of Water Metabolism."

Society News.—The executive and general offices of the Commonwealth Fund have been moved to the Fuller Building, Fifty-Seventh Street and Madison Avenue. The division of publications remains at 578 Madison Avenue. —— The first meeting of the season of the New York Neurological Society, October 1, will be devoted to a discussion of "Schizophrenia."

Hospital News. — The People's Hospital held memorial services, September 8, for Drs. Joseph Bieber and Hermann N. Appel at the West Side Jewish Center, 347 West Thirty-Fourth Street.——The New York Skin and Cancer Hospital has purchased the property of the Lying-In Hospital at Seventeenth Street and Stuyvesant Park, which will be vacated by the latter institution in 1931. The Lying-In Hospital has joined the medical center which is being erected on the East River near the Rockefeller Institute for Medical Research by the New York Hospital and Cornell Medical College. The board of directors of the Skin and Cancer Hospital will make a public appeal for $5,000,000 to refurnish, equip and endow the organization in its new quarters. The property comprises an eight story fireproof building, erected in 1901 largely through the generosity of the late J. Pierpont Morgan.——Montefiore Hospital announces the opening of its new Country Sanatorium at Bedford Hills, Westchester County, September 29. The country sanatorium is a division of the hospital in the city for the treatment of incipient cases of tuberculosis. The four groups of new buildings on a 200 acre site replace buildings erected in 1900. They will accommodate 220 patients.

Milk Dealers' Organizations Unnecessary.—Dr. Shirley W. Wynne, commissioner of health, assured the milk dealers of New York City, September 16, that it was unnecessary for any of them to join any organization and to pay enormous sums of money in so-called dues or assessments. If a dealer fears the consequences that might follow his leaving an association which makes these requirements, the health department promises full and adequate protection and guarantees that every legal requirement which it may invoke will be used to protect such person from unfair trade practices. The only requirement which the health department makes is that pure milk be sold and handled in accordance with the sanitary code. It is not necessary for dealers to enlist the aid of organizations which are known to exist for the "private profit of the projectors of the scheme." Dr. Wynne suggested that if milk dealers feel the need of an organization, it be legally incorporated with persons of public standing as the officers and directors, and that its books and accounts be open to public scrutiny. The health commissioner is conducting an investigation into the operations of the "New York Milk Chain Association," one of whose organizers, Louis Horowitz, has been indicted by the Bronx County Grand Jury on a charge of coercion in connection with the distribution of milk.

OREGON

Personal.—Dr. Byron J. Ashley during the coming year will be on the staff of the Doernbecher Children's Hospital, Portland, Ore.——Dr. Herbert K. Kent, Minneapolis, has been appointed health officer of Douglas County, succeeding Dr. DeWalt Payne, who has been appointed superintendent of the Eastern Oregon Tuberculosis Hospital.

Society News.—Drs. William T. Phy, Hot Lake, addressed the Eastern Oregon District Medical Society at its annual meeting, August 16, on "The Human Foot, Its Abuses and Their Corrections"; Dr. John G. Cheetham, Portland, on "Clinical Phase of Renal Tuberculosis"; Mr. Clyde G. Foley, Portland, executive secretary, Oregon State Medical Society, on "The Business Side of Medical Practice"; Dr. John H. Fitzgibbon, Portland, on "The Treatment of Esophageal Stenosis"; Dr. Leo B. Bouvy, La Grande, "Relation of Nasal Sinus Disease to Bronchial Asthma," and Dr. Edward A. Pierce, "Increased Frequency of Pulmonary Abscesses Following Post-Influenza and Post-Pneumonia Conditions."

PENNSYLVANIA

Personal.—Dr. John T. MacDonald, Norristown, has been appointed chairman of the Underprivileged Boys' Work Committee of Kiwanis International.——Dr. Carl K. Becker and family, Boyertown, have gone to British East Africa, where Dr. Becker will be a medical missionary of the Evangelical Congregational Church.——Dr. Harry J. Donaldson, who has been a member of the state game commission for many years, has resigned.

Typhoid at Camp Tabor Due to Carrier.—The chief of the bureau of communicable diseases of the state department of health, Dr. John Moore Campbell, reported, September 14, that the outbreak of typhoid among girls at Camp Tabor, which resulted in about sixty cases and several deaths, was caused by a typhoid carrier among the kitchen and dining room employees of the camp (THE JOURNAL, August 31, p. 700; September 14, p. 854).

State Medical Meeting at Erie September 30. — The annual meeting of the state medical society, September 30-October 3, will be the second annual meeting ever held in Erie; the first time the society met there was in 1869. It has met twenty-two times in Philadelphia and eleven times in Pittsburgh. Erie, "the gem city of the lakes," holds much of historical interest. Hotel headquarters will be at the Lawrence, at Tenth and Peach streets, two blocks from the convention hall. An abstract of the scientific program will be found in THE JOURNAL, August 31, p. 700.

Philadelphia

Personal. — Dr. William W. Keen, emeritus professor of principles of surgery and clinical surgery, Jefferson Medical College, was elected the first honorary member of the International Congress of Surgery at the triennial meeting in Warsaw, Poland, in July. The congress will meet next in Spain in 1932.

Maloney Clinic Dedicated.—The Martin Maloney Memorial Clinic Building of the University Hospital was dedicated, September 20. The cornerstone was laid by three members of Mr. Maloney's family. Dr. Alfred Stengel made the principal address. The clinic is a nine story limestone and brick building trimmed with terra cotta. It will provide facilities for the general medical outpatient department with dispensaries and special wards, the Pepper Laboratory of Clinical Medicine, and the John Musser department of research medicine.

Society News.—Dr. Chevalier Jackson recently addressed the forty-ninth annual meeting of the Lehigh Valley Medical Society at the Pocono Manor Inn on "Prevention of Certain Classes of Accidents to Children."——The Philadelphia County Medical Society installed new officers, September 25; the president now is Dr. John A. McGlinn. The society will be addressed, October 9, by members of the staff of the Eagleville Sanatorium on problems in tuberculosis. —— Dr. Jacob Earl Thomas gave the opening address at the one hundred and fifth annual session of Jefferson Medical College, September 23, on "The Development of Medical Teaching Laboratories." —— Dr. John W. Croskey attended the International Congress of Ophthalmology in Amsterdam, September 5-13.

Second Immunization Campaign. — Following extensive publicity, the department of public health of Philadelphia early this year undertook its second annual intensive campaign of immunization against diphtheria. In June, there were ninety-four places where toxin-antitoxin was administered to 20,000 children. At each place there was a physician and a nurse. The department says that 70 per cent of the pupils in the public schools of Philadelphia have been immunized against diphtheria

and in the parochial schools about 50 per cent. The incidence of diphtheria in both classes of schools has declined. The confidence which the public has in this work is shown by the fact that 7,000 children treated in the 1928 immunization campaign came back to the health centers for a Schick test. A similar but less extensive campaign will be necessary each year, for there are about 36,000 babies born in Philadelphia annually, most of whom become susceptible to diphtheria after 6 months of age.

TEXAS

Personal.—Dr. Charles M. Rosser, Dallas, on his retirement as medical director of the Praetorians, was presented with a gold watch and a check for $5,000 by the directors and other members of that fraternal organization. Dr. Rosser desires to devote his entire time to his practice.

Society News.—Among others, Drs. James W. Powers and Joseph D. Hall of Wichita Falls addressed the Northwest Texas District Medical Association, Mineral Wells, September 10, on "Resuscitation of the New-Born" and "Diagnosis and Treatment of Diseases of the Posterior Urethra," respectively. ——Drs. Jesse Bedford Shelmire, Dallas, and William Porter Brown, Fort Worth, addressed the McLennan County Medical Society, September 11, on "Skin Diseases."——Donley County has leased the Adair Hospital at Clarendon for the nominal sum of $10 a year. The Adair estate at no cost to the county renovated and refurnished the hospital.

VIRGINIA

McGuire Lectureship Established.—In recognition of his long service as president of the Medical College of Virginia, Richmond, from which Dr. Stuart McGuire retired, July 1, 1925, the board of visitors of the college has established the McGuire Lectureship which will be filled annually by an invited speaker. The lectures will pertain to medicine, dentistry, pharmacy or nursing, the fields covered by the several schools of the institution.

Society News.—Members of the Mecklenburg County Medical Society were reported at the June meeting to have inoculated 1,800 school children with toxin-antitoxin, for which they received the same fee which would have been paid to the state board of health.——The Northampton County Medical Society, Nassawadox, was addressed, recently, by Dr. James M. Hutcheson, Richmond, on "Heart Pains."——Margaret P. Kirk, Richmond, has made a gift of $1,000 to be repeated annually to the Woman's Medical College of Pennsylvania for preventive medicine.

State Medical Meeting at Charlottesville, October 22-24.—The sixtieth annual meeting of the Medical Society of Virginia will be at the University of Virginia, Charlottesville, October 22-24, on which occasion the medical school will dedicate its new building. The medical society meeting and the university dedicatory exercises, Tuesday afternoon, will be held jointly. Addresses will be delivered by Drs. J. Bolling Jones, president of the medical society; Hugh S. Cumming, surgeon general, U. S. Public Health Service, and Charles R. Stockard of Cornell University Medical College, New York. Members of the medical society are urged to attend this unusual program and to bring their wives. Headquarters will be in Cabell Hall on the campus. Everything, in fact, connected with the meeting except the clinics and the golf tournament on Thursday will be in this building. Scientific papers by members of the state society will be presented.

GENERAL

Personal.—Madame Curie, Paris, codiscoverer of radium, is expected to arrive in New York, October 15, to receive a second gram of radium from American friends.

Automobiles Nearly Make a Record.—In seventy-eight large cities of the United States, 710 deaths from automobile accidents occurred in the four weeks ending September 7. Since May, 1925, the lowest number of deaths reported in these seventy-eight cities was 346 for the period ending March 27, 1926, and the highest number 771 for the four week period ending September 7, 1929. The total number of automobile deaths reported in these cities in the fifty-two weeks ending September 7 was 8,074.

Number of Milk-Borne Epidemics.—There were forty-eight milk-borne epidemics in the United States during 1928, according to the U. S. Public Health Service. They involved 2,420 cases of illness and were widely distributed throughout the country. Typhoid headed the list with twenty-eight outbreaks; then came scarlet fever with eight; undulant fever with five; septic sore throat, three; diphtheria and gastro-enteritis, each two, and dysentery, one. The largest outbreak in this series was that of septic sore throat at Lee, Mass., amounting to hundreds of cases.

Prize for Essay on Cause of Decline in Birth Rate.—The Eugenics Research Association, Cold Spring Harbor, Long Island, N. Y., offers a prize of $3,500 for the best essay on the causes of the fall in the birth rate. The contest is open "to the world." Essays may be written in English, German or French, but must be unsigned except as identified by a motto and accompanied by a sealed envelop containing the name and address of the author; they must be mailed to the association not later than June 1, 1930. They should include an analysis of studies made and lay stress on the phenomenon in peoples of Nordic or chiefly Nordic origin in all part of the world. Preference will be given to essays which are based on objective studies rather than expressions of opinion. A recent prize offered by the Eugenics Research Association brought forth essays which showed that the net fecundity has been falling for the last forty years in different European countries.

First Aid Kit for Snake Bites.—The curator of mammals and reptiles at the New York Zoological Gardens, Raymond L. Ditmars, says in the *Bulletin* of the New York Zoological Society that a first aid kit for the treatment of snake bites should contain (1) several one-sided safety razor blades; (2) a small bulb and cupping glass for flat surfaces with additional attachment for round surfaces; (3) roll of rubber ligature; (4) a small roll of bandage; (5) two tubes of anti-venomous serum; (6) a few crystals of potassium permanganate. Mr. Ditmars continues to say that the bite of a poisonous serpent is unmistakable. The symptoms develop rapidly and if nothing happens within ten minutes following a bite the snake was harmless. Bites from poisonous serpents within three to five minutes cause a burning pain and within ten minutes a distinct swelling which rapidly increases followed within a half hour or less with profuse perspiration and maybe reflex vomiting.

Society News.—The American College of Physical Therapy will meet at the Hotel Sherman, Chicago, November 4-7.——At the twenty-seventh annual meeting of the Pacific Association of Railway Surgeons, Reno, Nev., August 23-24, Dr. William H. Hood, Reno, was made president; Drs. Alson R. Kilgore, San Francisco, and Giles S. Hall, Los Angeles, vice presidents; Dr. Calvin A. Walker, San Francisco, treasurer, and Dr. William T. Cummins, San Francisco, secretary. The association represents eight railroads and has a membership of 295. It will meet next in San Diego, August 22-23, 1930.——The first board of governors appointed for the Alumni Association of the American Medical Association of Vienna has been authorized to organize the alumni association during the next annual meeting of the American Medical Association in Detroit. The board of governors comprises Drs. John H. Besson, Portland, Ore., president; Grover C. Klein, Taylorville, Ill., and Isaac A. Abt, Chicago, vice presidents; U. Grant Gifford, Kennett Square, Pa., secretary, and Paul D. White, Boston; Bernard Kaufman, San Francisco; Harold G. Haskell, Troy, N. Y.; Frank C. Linden, Chicago; Norman P. Scala, Washington, D. C.; Joseph C. Aub, Boston; William B. Chamberlin, Cleveland; Walter H. Nadler, Chicago; Bernard Samuels, New York, and Emmett P. North, St. Louis.

American Academy of Ophthalmology and Otolaryngology.—The annual meeting of this society will be held at Atlantic City, October 21-25, under the presidency of Dr. Harris P. Mosher, Boston, with headquarters at the Hotel Traymore. The guest of honor will be Dr. Herbert Tilley, London, England. A symposium on brain abscess will be presented by Drs. William L. Benedict, Rochester, Minn.; Wells P. Eagleton, Newark, N. J.; William J. Mixter, Boston, and Harry P. Cahill, Boston. Among other numbers on the ophthalmic program will be the "report of the research fellow in ophthalmology" by Dr. Daniel B. Kirby, New York. The otolaryngologic program will include a symposium on the ethmoid by Drs. Ross H. Skillern, Philadelphia, Harris P. Mosher, Boston, Samuel Iglauer, Cincinnati, Ralph A. Fenton, Portland, Ore., and Robert C. Lynch, New Orleans. The instructional program will consist of conferences similar to those conducted for the last two years, each being limited to twenty participants; twenty-five rooms have been reserved on the first floor of the hotel for the conferences, so that each will be held privately in order to remove all interference. Most of them will be repeated so that all may attend any given subject. A charge of $1 will be made for each morning conference, but no charge will be made for the afternoon conferences with unlimited attendance. Arrangements have been made for golf tournaments and for the annual banquet, at which George H. Parker, professor of zoology, Harvard University, Boston, will speak

on "Heredity." Immediately following the meeting arrangements have been made for a boat trip from New York to Havana and Canal Zone. The president requests that all members having an avocation arrange for an exhibition with either Dr. Robert C. Lynch, New Orleans, or Dr. LeRoy A. Schall, Boston. A special room will be provided for the "hobbies."

LATIN AMERICA

Smallpox at Panama.—The commissioner of health of the government of Panama, according to the New York *Times*, reported that twenty new cases of smallpox had developed, making the total in the present outbreak, September 11, ninety-two cases. The president of the government of Panama authorized a special fund of $30,000 to meet the situation. There had been no deaths so far and the cases had been isolated at the Gorgas Hospital, Ancon.

Government Services

U. S. Public Health Service

Asst. Surg. Richard A. Steere was relieved from duty at the marine hospital, San Francisco, about August 1, and assigned to San Diego.——Passed Asst. Surg. Kenneth F. Maxcy has been assigned at Charlottesville, Va., for duty in connection with studies on typhus fever.——Asst. Surg. William W. Nesbit has been assigned to duty at the quarantine station, Honolulu, and Passed Asst. Surg. Fortuna A. Troie relieved from Honolulu and assigned to Ellis Island. N. Y.——Asst. Surg. Edward R. Pelikan has been relieved from duty at Hongkong, China, and assigned to duty at Manila, Philippine Islands, and Passed Asst. Surg. Fletcher C. Stewart has been relieved from Manila and assigned to Hongkong.——Sr. Surg. Taliaferro Clark in addition to his present duties has been assigned to cooperative work carried on by the Julius Rosenwald Fund of Chicago, by state departments of health and other organizations interested in improving health conditions among the negroes.——Surg. Lon O. Weldon has been relieved from duty at Portland, Ore., and Asst. Surg. Frank S. Fellows has been directed to assume charge of public health activities in that vicinity.——Asst. Surg. Richard B. Holt has been assigned to duty at Stuttgart, Germany.——Surg. Paul D. Mossman was directed, September 5, to proceed to Rice Lake, Minn., and Rolla, Mo., and return in connection with the prevention of trachoma.——Surg. John S. Boggess has been relieved from duty at London, England, and assigned to Copenhagen, and Surg. Charles W. Vogel was relieved from Copenhagen and assigned to Ellis Island, N. Y.

Colonels Darnall and Fisher Appointed Brigadier Generals

President Hoover has made nominations to the Senate for the appointment of Cols. Carl R. Darnall and Henry C. Fisher of the U. S. Army Medical School as assistant surgeon generals with the rank of brigadier general for terms of four years, commencing December 5 and October 11, respectively, to succeed Brig. Gens. James M. Kennedy and Frank R. Keefer. Colonel Darnall entered the military service in 1896. He has served in Cuba, the Philippine Islands and Hawaii, was secretary of the faculty of the Army Medical School, and, since 1925, has been executive officer in the surgeon general's office. Colonel Fisher entered the military service in 1891. He likewise has served in Cuba, the Philippine Islands and the Canal Zone as chief health officer, and, since 1925, has been commandant of the Army Medical School. Both officers have been awarded distinguished service medals.

Examination for Army Medical Corps

The War Department announces that an examination for appointment in the regular army medical corps will be held October 7-11. Applicants must be between 23 and 32 years of age, graduates of acceptable medical schools, and with at least one year's internship. They must pass a physical examination and have, in addition, moral character and general fitness for the military service. Any physician who fulfils the requirements and desires to take the examination should communicate with the surgeon general's office, Washington, D. C. Medical officers are commissioned as first lieutenant. Promotion occurs after a specified number of years of service.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 31, 1929.

Fellowship Examination of the Royal College of Surgeons

A primary examination in anatomy and physiology for the fellowship of the Royal College of Surgeons of England was held at Toronto in August, this being the first occasion on which this examination has been held out of England. The examination was conducted by Profs. William Wright, W. E. Le Gros Clark, C. Lovatt Evans and John Mellanby, who were sent out from England for the purpose, with Profs. J. P. McMurrich and C. H. Best of Toronto University as assessors. Sir H. J. Waring also attended as visitor on behalf of the English college. Twenty-three candidates presented themselves for examination and nine were successful. The Canadian Medical Association was responsible for the arrangements, and much of the success was due to Dr. Alexander Primrose, dean of the Medical Faculty of the University of Toronto, and Dr. T. C. Routley, general secretary of the Canadian Medical Association, who took an active part in bringing about this attempt to offer to Canadian medical physicians greater facilities for obtaining the F.R.C.S., Eng. There is a strong desire in Canada for closer association between the medical profession in the dominion and England. The examiners were received by the governor general at Quebec and by the prime minister of Ottawa, who expressed sympathetic interest in their mission. The final examination for the fellowship will be conducted only in England, but the opportunity of passing the primary examination in Canada should make two visits to this country unnecessary, and so, it is hoped, bring the F.R.C.S., Eng., within the reach of a larger number of Canadians than in the past.

Museum of Safety Devices in Industry

The home office industrial museum, established in 1927 to demonstrate methods of promoting the safety, health and welfare of industrial workers, has become a clearing house for ideas on these subjects. The visitors' book shows names of business men, engineers and academic workers from almost every country in Europe, and from Japan, China, Australia and Canada. Employers of labor are visiting the museum in increasing numbers. The museum is chiefly devoted to appliances and devices for the increase of safety and efficiency which have proved their value by service under factory conditions. Improvements which otherwise might have taken long to become generally known are disseminated more quickly and more widely. New ideas are constantly brought in by the government factory inspectors, and there is a continual shifting of the exhibits as one improvement succeeds another. It is hoped that the study and adoption of the methods demonstrated will gradually come to be regarded as a form of industrial insurance. As proof of the value of these methods, the museum has statistics showing reductions of 75 per cent in compensation claims since their adoption.

The new safety devices exhibited embody various principles. There are machines which automatically stop when the hand of the operator reaches a position of danger; machines which cannot be set working until all dangerous parts have been covered, and machines which can be worked only when both hands are on the controls, insuring that both hands are out of danger. The newest principle of design is that on which the machine is sent out from the makers complete with its whole protective covering. It is hoped that this type will be widely adopted, as it is the easiest to standardize and produce cheaply in large numbers.

The museum exhibit is not confined to what are ordinarily called "safety" devices. There is a section devoted to the effects of light and sound on the efficiency of the workers. One looks through a window into a miniature room of which the walls are white and clean. When a handle is turned darker and darker paper comes into place, to represent the gradual dirtying of the factory walls. Without any change in the source of light, the change in the color of the walls reduces the light in the room by 60 per cent. Similarly, photographs show the difference between a workshop where the light on the work tables is good but the roof and its girders are in obscurity, and a workshop where the roof is also in bright light. The former was found to have a depressing and distracting effect on the workers, and these photographs have led to changing the lighting conditions in factories. Experiments are shown with shadows, which must sometimes be eliminated, as where sewing machines are at work, and sometimes artificially created in order to throw the uneven surface of a piece of wood or metal work into convenient relief. The sound section demonstrates the latest devices in the reduction of noise, which is well known as a hindrance to factory efficiency. Here the roof is padded with Nova Scotia seaweed, which is full of air passages, packed in canvas, so that sounds from the floor level are absorbed. The museum is increasing rapidly in popularity, and preparations are being made to double its size.

The Population Problem and Birth Control

Mr. Harold Cox, the well known economist, has contributed to a discussion on birth control in the *Daily News* an article in his usual trenchant manner. He asks those who denounce birth control to explain how otherwise they propose to check the tendency of the human race to increase beyond the means of sustenance available. In the past nature solved the problem. Children were born like flies and died like flies. So do they still in India and China and in some other parts of the world. But in England we try to keep alive every child born, and we are making remarkable progress in that direction. The infant mortality in England and Wales is only half what it was forty years ago. Where, then, is the check to come from? That a check is necessary is easily demonstrable. In the first fifty years of the nineteenth century, the population of England and Wales doubled. An increase at that rate would give us in less than three centuries a population of more than two thousand million, more than the present estimated population of the globe. To keep our population within reasonable numbers, we must either reduce the birth rate or increase the death rate. Judging by the experience of the past sixty or seventy years, our people seem to prefer a reduction of the birth rate. In the second half of the last century this began to decline, and although simultaneously there was a decline in the death rate, the net result was a slight lowering in the rate of increase of the population. Our population, which by 1851 had doubled in fifty years, as stated, did not double again for sixty years. In the succeeding ten years the figures were considerably affected by the Great War, but since 1921, under ordinary peace conditions, birth and death rates have declined. The net increase in population is at a lower rate than in the nineteenth century, but it is still far higher than it should be. In 1927 the excess of births over deaths was 270,000; in 1928 it was just under 200,000. This is solely the result of excess of births over deaths. Immigration and emigration make very little difference in the total population. In 1927 the net outflow was 70,000. That inadequate figure leaves us with the grave problem of a rapidly growing population in an overcrowded country. Many of our industries no longer require the labor that they did a generation ago. Our staple industries are subjected to ever increasing competition. The only hope for many of our industries lies in improving methods of production, which means securing a bigger output with less labor. Thus, from the industrial point of view, we want fewer people. From the human point of view a reduction is even more desirable. No less than 80 per cent of our population live in towns, many of which are overcrowded. Millions are packed in crowded slums, where the houses are so close together that sunlight and fresh air are shut out, and the children have nowhere to play, only narrow streets. England can solve her population problem, but only by birth control.

The Noise Nuisance

In a previous letter to THE JOURNAL (July 6, p. 45) it was shown that the nuisance of traffic noises was under the consideration of the government. Dr. C. W. Hutt, health officer for Holborn, one of London's noisiest boroughs, discusses the problem in his annual report. He describes the noises of the city highways as "unrhythmic, discordant, varied and, above all, unpredicable." The noisiness of London, he says, means an enormous drain of energy even from those who are not acutely conscious of the noise as a nuisance, but who, nevertheless, all the while are unconsciously putting up a resistance to it. These noises harm the passers-by whose brains are not concentrated on work. The office worker must perforce take steps to combat the insufferable nuisance. The windows must be kept closed, with all the disadvantages of inadequate ventilation. This precaution does not always suffice in the case of professional men grappling with intricate problems; the disturbance of intensive concentration causes irritation and consequent fatigue. Among suggestions for noise reduction, Dr. Hutt includes the prohibition of the use of pneumatic drills at night in proximity to occupied dwelling houses. He even suggests the total prohibition of such drills on the ground of the injury to the health of the workmen using them.

PARIS

(From Our Regular Correspondent)

Aug. 20, 1929.

Bilateral and Symmetrical Dry Liparthritis of the Knees

Under the heading "bilateral and symmetrical dry liparthritis of the knees," R. J. Weissenbach and F. Fançon describe a form of rheumatism that occurs frequently in women coincident with the menopause or after oophorectomy. This form of arthritis constitutes a morbid entity caused by the cessation of ovarian functions. It is, in fact, associated with the well known symptoms that characterize insufficiency or abolition of the ovarian functions, such as hot flashes of the face, headache, insomnia, a tendency to obesity, and disorders of character. Liparthritis is observed around the age of 50 or, in cases of ovariotomy, from two to ten months after the operation. It is very frequent among the well-to-do, as Françon observed at Aix-les-Bains, the well known spa. Liparthritis is characterized by an inflammation of the articular synovial membrane. The membrane is thickened and abnormally vascularized, and has lost its normal shiny aspect. After a time, if the patients are not treated, the inflammation gradually attacks the cartilaginous and bony parts of the joint. It becomes thus an ostearthritis, as is shown by roentgenograms. One notes frequently in these patients bilateral flatfoot and a tendency to genu valgum. The onset of liparthritis is slow and the patient often observes the first indications of it following a slight traumatism, sprain, wrench or the like. The pain associated therewith may disappear at night or as the result of repose in a recumbent position. Sometimes a marked functional impotence develops. In particular, one observes difficulty in descending a staircase, for the legs give way, and also in rising from an armchair. On examination, the knee is found to be infiltrated; the patella and the patellar tendon are encased by an immense pad, and the ligaments are lax. The lesions are frequently bilateral. Often there are other rheumatismal manifestations. Liparthritis results, after several years, in a reduction of the movements of

the knee joint; the reduction affects particularly the flexion movements. This form of arthritis is essentially feminine. Treatment consists in ovarian and follicular organotherapy; the administration of sulphur and iodine, and warm baths acting on the general condition and on the joint in particular.

The Permeability of the Placenta to Heterologous Serums

M. L. Nattan-Larrier, professor in the Collège de France, working in collaboration with L. Richard, has discovered that heterologous serums injected into the blood stream of the female guinea-pig, during the second month of gestation, traverse the placenta. Such penetration is slow and difficult but it may nevertheless be accomplished within twenty-four hours. The quantity of heterologous serum found then in the fetal blood is very slight, but it can be increased, as may be proved if the females are allowed to live longer and the examination of the fetal blood is made at a later time. The permeability of the placenta to heterologous serums and its impermeability to homologous serums may be compared with its permeability to artificial antibodies and its impermeability to natural antibodies. Professor Nattan-Larrier has specialized for a long time in researches pertaining to the physiology of the placenta, a better knowledge of which will serve no doubt to clear up many questions now imperfectly understood in regard to immunity and the hereditary aspects of various diseases.

International Conference on Mental Hygiene and Psychiatry

The inaugural public session of the Conférence internationale d'hygiène mentale et de psychiâtrie, organized by the Ligue nationale d'hygiène mentale, was held at the Hôpital Henri Rousselle, 1 rue Cabanis. The chairman of the league is Dr. Toulouse. The conference was opened by M. Oberkirch, undersecretary of state to the ministry of health. Many foreign physicians attended the conference and presented papers giving their observations on the progress of mental hygiene and the financial assistance rendered patients, in their respective countries. The conventionists visited the Centre de prophylaxie mentale de la Seine in the Hôpital Henri Rousselle—which is a model of its kind. In the afternoon, a public session was held at the Institut international de coopération intellectuelle de la société des nations. Dr. Toulouse and Dr. Dupouy presented a paper on "Legislation Pertaining to the Mentally Ill," and Professor Ley discussed the general organization of mental prophylaxis. The conventionists took up then the question of the creation of a permanent committee on hygiene and mental prophylaxis, to be associated with the League of Nations.

International Congress of Microbiology

The first international congress organized by the Société internationale de Microbiologie will be held in Paris at the Institut Pasteur, Rue Dutot, from Oct. 1 to 12, 1929, under the honorary chairmanship of Dr. Roux. Professor Bordet is president of the congress and Professor Kraus (Vienna) is general secretary. The program will consist of reports, lectures and practical demonstrations. Reports will be on the following subjects: scarlet fever (etiology, prophylaxis and treatment), by MM. Dochez, Cantacuzène, Zlatogoroff, Friedemann and Debré; malta fever and epizootic abortion, by MM. Wright, M. Kristensen, Burnet and Rinjard; microbic variations and the action of lysins, by MM. Bordet and Max Neisser; pathogenicity of cholera, by MM. Sanarelli and Kabeshima; etiology of influenza, by R. Pfeiffer; tissue culture, by A. Carrel; decomposition of the structure of vegetable matter in the soil and the formation of soil, by Winogradsky. Lectures on the following subjects will be presented: protective inoculation against tuberculosis, by Professor Calmette; protective inoculation against diphtheria, by Professor Ramon; experimental syphilis and immunity, by Professor Kolle; lipoids, by Prof. S. Belfanti; immunity in plants, by Professor Carbone. Two other lectures are to be delivered by American bacteriologists. Lectures with practical demonstrations will be given on the culture of tissues and tumors in vitro by Borrel, A. Fisher and Canti. Lectures on parasitology will be given by Brumpt, Fülleborn, Mesnil and Nuttall. Statutes of the society will be presented for approval at the congress. Membership in the society is not required for attendance at the congress.

A Monument to Professor Grasset

A monument to the celebrated neurologist Professor Grasset will be dedicated in October at Montpellier, where he served as professor. MM. Paul Bourget, Janet, Achard and Dumas are members of the committee, which includes all medical men of note in France. The monument will be the work of the famous sculptor Injalbert, who has conceived for the purpose a bust surmounting a column and, at the right of the column, Fame bearing the palm of glory and gratitude.

The Sixth Congress of Stomatology

The sixth Congress of Stomatology will be held, October 21-26, at the Faculté de médecine de Paris, under the chairmanship of Dr. Rousseau-Decelle. The organization committee has placed the following topics on the program: "The Septicemias of Buccodental Origin," papers by M. Thibault and M. Raison; "Surgical Treatment of Infections of the Periapex; Curettage and Resection; Remote Results," presented by M. Lacronique, and "Prophylaxis of Dental Caries," to be discussed by M. Léon Frey. Likewise, questions of a professional and syndical nature will be discussed. The Association stomatologique internationale, also, will hold its sessions during the congress. An extensive exhibit of apparatus and instruments pertaining to stomatology will be held at the Faculté de médecine in connection with the congress. An opportunity will be offered the conventionists to visit the large manufactories of apparatus and of pharmaceutic and special products.

Congress of Hygiene

The sixteenth annual Congress of Hygiene has been organized as in former years by the Société de Médecine publique et de Génie sanitaire and will be held October 8, 9 and 10 at the Institut Pasteur. The president of the congress is Georges Brouardel, member of the Académie de médecine, physician at the Necker Hospital, member of the Council of Hygiene and president of the society. Registration is free, but only members of the society are entitled to reprints of the discussions that take place at the congress. Papers on the following subjects, which have been arranged for by Dujarric de la Rivière, director of the laboratory at the Pasteur Institute, will be presented: laboratory and hygiene: control of laboratories, by Dr. Dejust and Professors Lisbonne and Rochaix; accidental poisoning with hydrocyanic gas in the course of disinfecting habitations, by Kohn-Abrest, head of the police department of toxicology; reports of the health department for the care and protection of children, by Bussière, head of the health department of Montluçon, secretary general of the Society of Public Health Physicians of France, and Pissot, physician at the National Orphanage in the department of the Seine and Oise. A paper will be read by René Martial on the immigration problem in France, with a consideration of past and present attitudes, technic and legislation. Dujarric de la Rivière will present a paper on the quarantine and shipping regulations of Egypt. The department of Dr. Jules Renault in the Hospital of Saint-Louis will be visited to enable those attending the congress to study modern hygienic installations in the Parisian hospitals. As Dr. Renault has described at the Academy of Medicine, the wards to be visited are supplied with a system for the regulation of ventilation so that they can be heated in winter and refrigerated in summer with constant humidity.

Meeting of the Anatomic Society

The general meeting of the Anatomic Society will be held October 8 and 9 at 9 p. m. Prof. Gustave Roussy of the Faculty of Medicine and president of the society will preside. The following subjects will be discussed: cirrhosis of the liver, by Rossel (Bâle) and Noël Fiessinger (Paris), and the sympathetic nervous system in the arm, by Hovelacque (Paris).

RIO DE JANEIRO

(From Our Regular Correspondent)

Aug. 15, 1929.

First Centennial of the Foundation of the Academy of Medicine of Rio de Janeiro

In commemoration of the first centennial of the foundation of the Academy of Medicine of Rio de Janeiro, a celebration took place, June 30. This celebration included the gathering of the following congresses of medicine: The first Brazilian Congress of Medicine, the second South American Congress of Tuberculosis, the first Brazilian Congress of Eugenics, the second South American Conference of Microbiology and Hygiene, the Brazilian Congress of Neurology, Psychiatry and Legal Medicine and the Brazilian Congress of Syphilography. All South American countries sent scientific delegations composed of their most prominent physicians. Several prominent European physicians added to the celebration of this centennial both by their presence and by the reading of their papers. The scientific program consisted of theses and lectures on many branches of medicine. The lectures were delivered in the assembly room of the academy, and the practical work was performed at the College of Medicine of Rio de Janeiro. The social entertainments were most enjoyable and were held in an environment of sincere cordiality. The foreign congressmen, by excursions, on land and sea, were shown the many natural beauty spots of Rio de Janeiro, which are the most powerful charm for all foreigners who visit Brazil. At the banquets and receptions, the foreign congressmen were treated with the characteristic courtesy that Brazil extends to its visitors.

Study on Revision of the Grouping of Spirochaeta

Dr. Abdon Estellita Lins in the contest for privatdozent in the chair of microbiology of the Faculty of Medicine of Rio de Janeiro presented a careful and complete review of all work previously done on the grouping of the spirochete, over which so many controversies have arisen. The paper is divided into two parts: (1) general notions, which include the history, synonymy, taxonomy and definitions of *Spirochaeta;* (2) general and specific characterization, which considers the form, dimensions, structure and biology of spirochetes. The second part of the paper contains the revision of the generic and specific denominations, the revision and classification of the species, a general list of names, which has been revised, and a bibliography. The author justified the term which he prefers: *Spirochaeta.* Then he showed that that group partakes of the characteristics of bacteria as well as of protozoa, and explained that the classification of spirochetes could not be based only on their form, dimensions and structure, but that it must include all features, especially pathogenic action. He advocated the elimination of the genera *Spirillum, Spironema, Microspironema, Schaudinnia, Spiroschaudinnia, Borrelia, Spirella, Pseudospira, Cristispirella* and *Treponomella,* and admitted the names of only five genera as being justifiable: *Spirochaeta, Treponema, Cristispira, Saprospira* and *Leptospira.* He revised *Spirochaeta* in accordance with its host, and included some new species. He lists *Leptospira icteroides* as the germ of yellow fever, because his paper was written previous to the studies which revealed that it is not the germ of that disease. In that part of his paper, he gave special attention to each germ, and devoted a chapter to the spirochetes which naturally live in water and on vegetables. He mentioned all revised species with their respective synonymy. He gave a list of the spirochetes which are pathogenic to man, to reservoir animals, and to animals that are transmitters of each species of germs, which he divided into three groups: natural or accidental intermediate hosts, hosts in which spirochetes develop and hosts in which spirochetes do not develop. He gave a list of the revised names (303), and referred to 1,800 papers on this general subject in the bibliography.

Classification of the Nutritional Disturbances of Early Childhood

Dr. Leonel Gonzaga recently read a paper on a classification of the nutritional disturbances in infants before the National Academy of Medicine. He spoke on the classifications of Czerny-Keller and Finkelstein, and on his own classifications, which he made in 1923. The one which he now presents has four divisions; the first is devoted to the general designation of the disturbances; the second, to their etiologic origin; the third, to the principal clinical types of nutritional disturbances, and the fourth, to the possible outcome of the disturbances. Dr. Gonzaga stated that the disturbances of alimentary origin are caused by suppression of food, by deficiency of food, by inappropriate diet, or by excessive ingestion of food. According to this classification, suppression of food leads to starvation; deficiency of food is a result of "hypoalimentation," either in quality or in quantity; inappropriate diet leads to "farinaceous" dystrophy, Barlow's disease, and "alimentary" anemia, and excessive ingestion of food leads to dyspepsia, intoxication and toxicosis. The speaker considers the exudative, neuropathic and spasmophilic diatheses as the principal disturbances caused by organic defects. He subdivided the disturbances caused by infections into parenteral and enteric, and among the enteric he considers enteritis, colitis and dysentery. He called attention to the possible coexistence of these several causes. Under the fourth column of his classification, Dr. Gonzaga mentioned the disorders of Finkelstein, Langstein and Parrot, which he considers may be the end-result of all dystrophies.

Is There a Pneumonic Form of Yellow Fever?

Dr. Theophilo de Almeida, health inspector of the province of Rio de Janeiro, has closely observed from the first all cases of yellow fever which appeared in 1928 in some districts of the city of Rio de Janeiro. He has paid particular attention to all new cases (either suspected or confirmed), and has observed an unusual frequency of cases of pneumonia in the infected zone; some of these cases were fatal, and the diagnosis of pneumonia was confirmed at necropsy. From these observations, the speaker concluded that there might be a pneumonic form of yellow fever; the prevalent opinion was contrary to his supposition, and the confirmation of pneumonia at necropsy was enough to nullify the possible diagnosis of yellow fever. The first case that the speaker observed and which excited suspicion of a pneumonic form of yellow fever resulted from the finding, in a house in the infected district, of the body of an aged woman, whose family was interested in concealing her death. Investigation showed that the woman was taken ill with fever and vomiting and pain in the lungs, and that she died after four days. The yellow fever commission was notified of this case; but it was revealed at necropsy that she had died of simple pneumonia. The speaker found two other similar cases in the same district shortly afterward, and reported them to the authorities in charge of the cases of yellow fever who confirmed the diagnosis of pneumonia. Several other cases of pneumonia among yellow fever patients were reported later. An assistant inspector in the National Department of Public Health also reported a case which was diagnosed as pneumonia but which was treated as a "suspected case of yellow fever."

This proved that other physicians also considered the probability of a pneumonic form of yellow fever, and that this opinion should not be disregarded. Dr. Almeida concluded by saying that he had no evidence to support his opinion, and that he was giving publicity to it only in the hope of calling it to the attention of his colleagues.

BERLIN

(From Our Regular Correspondent)

Aug. 24, 1929.

Venereal Diseases Most Prevalent Among the Unmarried and the Divorced

Exact figures from the national census on venereal diseases for 1927 are now being published. All patients with venereal diseases were counted who were given medical care from Nov. 15 to Dec. 14, 1927. The census (including the army and navy) was taken by 32,521 general practitioners, 1,769 specialists in skin and venereal diseases, and 3,558 institutions (hospitals and dispensaries); 30,325 of these censors gave negative reports. The data show that only one fifth of the physicians and institutions admitted new patients with venereal diseases during the period considered. There were 26,941 patients (18,485 men and 8,456 women) who within one month presented themselves for medical care for the first time. From these figures and from previous experiences, it is estimated that 370,000 individuals annually contract venereal disease. If one considers the distribution of venereal diseases according to the social state of the patients, whether married or single, a significant lesson may be learned from these statistics. The annual numbers, computed in proportion to 10,000 individuals, are distributed as follows:

	Aged 15 to 19 Years		Aged 20 to 29 Years	
Social State	Male	Female	Male	Female
Single	55.8	57.6	333.6	129.6
Married	....	....	96.1	57.3
Widowed	....	....	279.7	109.3
Divorced	....	....	424.7	376.8

	Aged 30 to 39 Years		Aged 40 Years or Over	
Social State	Male	Female	Male	Female
Single	340.8	52.4	66.8	9.3
Married	81.6	32.7	25.4	8.5
Widowed	127.2	30.0	20.4	4.9
Divorced	348.9	229.7	107.6	45.1

These figures indicate that venereal diseases are most prevalent among divorced persons. In this group it may also be noted that with the exception of persons over 40 years of age, the numerical differences between the two sexes are comparatively low. The number of diseased among the married men in comparison to the unmarried men is especially low, while among the women the difference between the married and the single is not so pronounced.

The number of syphilitic persons among the widowed is much greater than among the married, especially in the two age groups under 40, and particularly among the men. The highest numbers were found among the divorced. Cases of secondary syphilis were detected in surprisingly large numbers among divorced women between the ages of 20 and 39. In a considerable number of these cases, venereal infection had probably been the ground for divorce.

Taylorism and Fordism

At a recent convention of the University of Leipzig, Prof. Felix Krueger, director of the Institute of Psychology in Leipzig, gave a report on new issues in psychology. Psychology has now turned away from the narrow, mechanical conceptions which were formerly held by many psychologists. Modern psychology approaches the manifold and complicated incidents in the sphere of the human soul with a new attitude. It is now thought that it may be considered a great gain, if the exact proceedings in any psychologic occurrence can be described. Only then can science attempt to give explanations. Formerly explanations were often given in an off-hand manner, and nothing was really explained. Modern psychology considers a number of conceptions and qualities which are entirely different from those which pertain to the natural sciences; for instance, the "Gestaltbegriff" (from idea), and the "Formgefühl" (feeling of form). These conceptions are beyond any purely mechanical anatomic definition. The conception of "Ganzheit" (entity) becomes steadily more significant for science. This idea contains more than merely the sum of the parts, of which "Ganzheit" seemingly consists. Significant, positive results have been obtained by the newer psychologic investigations. In many experiments it has been demonstrated that Taylorism and its modern successor Fordism are incorrect when they consider the shortest method of performing a task to be the best in all instances. While it is often true, it is not valid for many working processes. It has been found that natural motion is less tiresome, and consequently permits longer and more exact work than motion that is constrained in any way. The purely mechanical laboratory psychology that took its bearings from the natural sciences has lost its significance. Scientists have recognized that all psychic events are enclosed in a manifold entanglement of psychic-bodily interrelations. Every action of man arises from the entity of his being and from that principle —the soul—which present-day psychology has again recognized as the fundamental cause of all human feeling, thinking and acting.

The Heart in Participants in the Olympic Games

The changes in the heart caused by athletic activity have been the object of medical investigations in recent years. Dr. Herxheimer, who works with Professor von Bergmann in the medical clinic of the Charité hospital in Berlin, was invited by the director of the Olympic laboratory, Professor Buytendijk, to come to Amsterdam to study the hearts of participants in the Olympic games. The results of these investigations are now accessible. Dr. Herxheimer's report is based on the size of the heart in relation to the body weight of 246 participants in the Olympic games. The various branches of sports are presented in this number. It is evident that the athletes who came to Amsterdam were well trained. They were individuals who through several years of intensive training had prepared their bodies for the highest physical accomplishments. The size of the heart in the "Mehrkämpfer" (persons taking part in several sports) and in the short distance runners differs only slightly from that in average individuals. Among the ten branches of sports which are especially mentioned by Dr. Herxheimer, the "Mehrkämpfer," with an average weight of 79.06 Kg., rank third according to weight, while according to the size of the heart they rank last. The short distance runners rank seventh in weight, which averages 66.05 Kg., and ninth when rated according to the size of the heart.

The computations were based on roentgenoscopic examinations of the heart. The roentgenograms were made during respiratory rest, at a distance of 2 meters and with an exposure of 1.2 seconds. The persons were standing; this is significant because there is a difference of 2 mm. in the transverse diameter of the heart in the standing and in the sitting positions. By comparing the transverse diameter of the heart with the body weight, Herxheimer computed the heart quotient, which indicates the ratio of the body weight to the volume of the heart. The larger the quotient, the smaller the heart. In the "Mehrkämpfer" the quotient is $\frac{1}{63.3}$; in short distance runners, $\frac{1}{62.3}$. Long distance swimmers may also be counted in this group; with an average weight of 79.51 Kg., they are the heaviest athletes and at the same time they have the smallest hearts, the quotient being $\frac{1}{63.8}$. There is considerable difference in weight between them and the Marathon runners.

Marathon racing taxes the heart severely. Marathon runners, with an average weight of 59.39 Kg., have the largest hearts, their quotient being 1/46.4. Sportsmen with a weight of over 79 Kg. are, besides the "Mehrkämpfer" and the long distance swimmers, the heavy weight athletes. Their average weight is 79.43 Kg. Their hearts, however, are comparatively larger, their quotient being 1/56.8. The oarsmen, with an average weight of 75.2 Kg., also belong among the heavier athletes. They have comparatively large hearts, the quotient being 1/51.7. The long distance bicycle racers, with a quotient of 1/48.7, are in regard to the size of their hearts surpassed only by the Marathon runners. The boxers with an average weight of 61.18 Kg. and with a quotient of 1/52.7 may also be counted among the athletes with large hearts. The short distance bicycle racers, with a quotient of 1/55.1, have a much smaller heart than the long distance bicycle racers. However, their average weight of 69.52 Kg. somewhat surpasses that of the long distance bicycle racers. The medium distance runners are about midway between the short distance runners and the long distance runners. With an average weight of 65.28 Kg., their quotient is 1/55.1. The comparison of the runners indicates clearly that the increase in the size of the heart is parallel to bodily exertion. On the whole there is no danger of overtaxing the heart by athletic activity, if one keeps within moderate limits and does not strive for record accomplishments.

BUENOS AIRES

(From Our Regular Correspondent)

July 15, 1929.

Medical Delegations to Brazil

Twenty-five physicians from Argentina attended the recent celebration of the first centennial of the foundation of the National Academy of Medicine of Rio de Janeiro. Five congresses were held during the celebration: the Brazilian Congress of Medicine, the Brazilian Congress of Eugenics, the South American Congress of Hygiene and Microbiology, the Pan-American Congress of Tuberculosis and the Brazilian Congress of Neurology and Psychiatry. Profs. G. Aráoz Alfaro and B. H. Houssay represented the National Academy of Medicine of Buenos Aires; a delegation composed of Dr. A. Bachmann, president of the delegation, and Drs. Speroni, S. Marino and J. R. Beltrán y Paolucci, the government of Argentina; Drs. B. Castrillón and J. Carreño, the local government of the province of Buenos Aires; Prof. R. Bullrich, the Faculty of Medicine of Buenos Aires, and Drs. Pizarro, Arata, Sayago, López Agrelo and Barilari, the universities and the profession of Córdoba. The delegates made a lengthy visit to the headquarters of the campaign against yellow fever, which is being conducted under the direction of Prof. C. Fraga. They also made visits to the Osvaldo Cruz Institute, the new buildings of the Hospital São Sebastião, the antisyphilitic Foundation Gaffre Guinle, the preventorium Doña Amelia en Paquetá, and the School of Medicine of Rio de Janeiro. At São Paulo the delegates admired the new College of Medicine, the Biologic Institute of which Dr. A. Neiva is director, and the public health works, which are in charge of W. Oliveira. The delegates returned to Buenos Aires noticeably impressed by the courtesy which they received from their Brazilian colleagues and the Brazilian society.

Quarantine of Ships Against Yellow Fever

Last March, when the epidemic of yellow fever in Rio de Janeiro reached its highest point, the government of Argentina ordered that all ships which had anchored at an infected or suspected port in Brazil should be kept under sanitary observation for six days, counting from the day on which the health authorities examined the ship. This order demanded that several health inspectors be sent to Santos to board the arriving ships. Santos is a port situated three day's journey from Buenos Aires; on arrival the ships were held three days more for observation. Since the port of Buenos Aires is very active, there were constantly from thirty to forty ships under observation. After the report by the delegates who attended the Brazilian congresses that there were no more cases of yellow fever at Rio and that the sanitary campaign was being carried out in an efficient manner, the president ordered the quarantine regulations to be discontinued on July 21.

Leprosy

The Asociación Médica Argentina held a public assembly on August 10 in honor of Dr. E. Burnett of the Pasteur Institute. Dr. Burnett is the commissioner from the League of Nations who is to make a special study of leprosy and its prophylaxis in South America. Dr. Burnett praised the leprosy law of Argentina, and believes that the immediate enforcement of this law will solve the problems of prophylaxis and extinction of leprosy in the whole country. After having heard Dr. Puente and Professor Baliña, who has observed fifty-three new cases of leprosy within the past few months, the assembly resolved to ask the government to continue with the construction of the proposed leprosariums.

Changes in the Faculty of Medicine of Buenos Aires

The election of the directors of the Faculty of Medical Sciences of Buenos Aires was held on August 10. Drs. B. A. Houssay, M. R. Castex, C. Bonarino Udaondo, A. R. Marotta, M. L. Perez, T. Rumi, P. Escudero, F. Schweizer, U. Fernández and U. Carrea were elected. They are the ten councilors that are chosen by the teachers. Drs. C. Fonso Gandolfo, F. Bustos, G. Martínez Guerrero and A. ven der Becke were elected also. They represent the four councilors that are appointed by the students. Drs. R. Bullrich and A. Ceballos were elected to represent the faculty before the superior council of the university.

The election was quiet, notwithstanding the fact that some days before some discordant groups tried to cause disturbances. One of these disturbances was the assault of the center, "Estudiantes de Medicina," during which shooting occurred. One of the electoral urns was stolen during the election. The participants in the disturbance testified later that they were ordered to act violently by a number of the professors. Such acts deserve general disapproval.

BUCHAREST

(From Our Regular Correspondent)

Aug. 29, 1929.

The Diseases of Illustrious Persons

Dr. Caplescu Poenaru, lecturer in the University of Bucharest, recently gave an address at the Bucharest Ateneul Roman on the diseases of illustrious persons. He said that syphilis and alcoholism predominate among the acquired and inherited diseases of notable persons. He started the list of illustrious persons with Jesus, the greatest benefactor of humanity. He mentioned that Binet Snangle in his three volume work "La folie de Jesus" attempted to show that Jesus was a maniac, that he was tormented by visions, that he did not do wonders and perhaps only hypnotized the hysterical and other persons who appealed to him; that he was an agitating prophet, and that he did not die on the cross but was buried alive and thus could escape from his tomb. Papini's work "Life of Christ" considers Jesus as a great humanist and as the precursor of Rousseau and general democracy. Jesus probably suffered from tuberculosis, judging from the statement of physicians that "water flowed from between his ribs, when he was stabbed with a lance." Probably he had a serous pleuritis.

In ancient times the knowledge of hygiene, which was based entirely on religious beliefs, left much to be desired. It is stated in several books on parasitology that celebrated men of different

ages were lousy throughout life and that these parasites were important factors in causing their untimely death. The list includes: Alcman, a Greek poet; Plato; King Herod; Menenius Agrippa; Pherecydes, the great tragedian of the Greeks; Philip II of Spain; Cardinal Dupra, and Foucault. Stigmas of degeneration have been frequent among the Hapsburgs; hence the peculiar and curious characters of some members of this family. Characteristic peculiarity has been particularly emphasized in the following members of the Hapsburg family: Leopold XVI, Maria Louisa, Maria Theresa, Renaude, Marie Antoinette, Rudolf II of Germany, John VI of Portugal, Charles II of Spain and Maria Caroline, Cosimo II, and Hercules of Italy. The most important stigma in all of them was marked projection of the jaw. Besides this a striking increase in the vertical diameter of the face has been frequent in the Hapsburg family.

According to Corvisart, Napoleon's physician, Napoleon suffered from constant bradycardia. His heart seldom exceeded 50 to 60 beats a minute. It is alleged, but not by Corvisart, that Napoleon was an epileptic. He did not display the regular form of attacks, but he had spells of unconsciousness which lasted only for a short time and came on infrequently. Napoleon died on the island of St. Helena from cancer of the stomach. His father and several other members of the family died from the same disease. Napoleon's letters reveal that he had an unusual sense of sentiment, seldom seen in great military leaders.

Cabanes' works contain criticism of several rulers. According to him, Juana la Loca, the daughter of Ferdinand of Aragon and Isabella of Castile, who married Philip the Handsome, displayed exaggerated and pathologic love. Her unbounded jealousy led to many scandalous scenes. She herself cut the hair of Philip's favorite court dame and insulted her corporeally. Her capricious nature, taciturn behavior and maniacal attitude compelled her father and husband to declare her insane, and thus deprived her of the right to inherit the throne.

The notorious rule of Charles V, son of Philip the Handsome and Juana la Loca, is well known. His son, Philip II of Spain, lived a wild life before his marriage; he was a chronic "skirt hunter" as he was called at that time; a "Don Juan" as he would be called now. Clad in disguising clothes he frequented public places, dens, haunts and brothels. In his religious craze and fanaticism he went so far as to order thanksgiving processions when his son died, thanking God for having called his son to himself. When his wife died he wrote to the Prince of Alba as follows: "Prior to her death she gave birth to a girl of four to five months' gestation. The child was christened and shortly afterward went up to heaven with her mother."

Philip II had his son, Don Carlos, cast into a prison, and stated that by reason of his character and vengeful nature he lacked the virtues that would make him fit to rule a country. Some contemporaries alleged that his act could be traced to jealousy. When Don Carlos fell ill in the prison and begged his father to come to see him, he denied his request and even forbade the queen to visit her son. According to some historians the king was responsible for the death of Don Carlos. He ordered the execution of Baron Montigny because he dared to assert publicly that "it is an improper deed to soil clerical actions with blood."

Peter the Great, who acquired the throne of Russia in a vicious way, was an epileptic and had a hot temper. He was so afraid of black beetles that he boxed the ears of one of his officers who showed him a black beetle out of his prized collection of insects. The officer, of course, did not know of the emperor's insectophobia. Peter the Great had a character which ran to extremes. Lashing, kicking and beating were the punishments of his time. He beat his ministers, and thrashed his favorite minister, Menchikoff, until he bled because he danced at a court ball with his sword at his side. Besides having liaisons with court dames, he selected sweethearts from among laundresses, servant girls and the like. He acquired syphilis in Holland and then infected his wife. He had one of his sweethearts, Hamilton Pavlona Maria, beheaded because she had three miscarriages, probably on account of syphilis contracted from him. Eye witnesses stated that after decapitation he picked up her head and gave an anatomic lecture on it to those present, then kissed the pale lips and threw it away, after which he made the sign of the cross and left. He studied anatomy extensively and maintained a well equipped anatomic museum for his own use. He also studied medicine and dentistry. He granted pardons to criminals who permitted him to extract their teeth. He had his first wife shaved and afterward imprisoned her. He had his son Alexis killed. His second wife, Czarina Catherine I, spoke several languages, but could neither read nor write except to sign her name.

Peter III, Grand Duke of Holstein, was an imbecile. Although he was the ruler of a state, he played with toy soldiers especially made for him of wood and lead. His favorite pastime was training dogs. His wife, Catherine II, suffered much from his vulgarity, coarseness and brutality. He was drunk almost constantly.

After having dethroned her husband, Catherine II became very loose morally. She became pleasure-loving and sensual, and even in her advanced years had a great number of lovers. Her son, Paul Petrovici, was a degenerate and an epileptic. Catherine once spoke about her son to a friend as follows: "What is your opinion of this idiot? What will become of Russia, if he reaches the throne?" After Catherine's death from a cerebral hemorrhage, Prince Paul occupied the throne. He did not impress any one as being a normal man.

Molière suffered from advanced tuberculosis, and in addition to this he worked too much. His tragic death resulted from a pulmonary hemorrhage which began during the fourth performance of his famous comedy the *Malade Imaginaire*. He died within a few hours. The fate of Charles Baudelaire was similar. Alfred de Vigny and Balzac also died of pulmonary tuberculosis. Alfred Musset was a slave to drink, and although his works were highly appreciated during his life, his funeral was attended by not more than thirty mourners. Rachel, the great French tragedian, whose statue stands in the entrance hall of the Paris Comédie Française, died at the age of 37 from tuberculosis of the lungs.

From a pathologic point of view the life of Edgar Allen Poe is interesting. His works had a great influence on Baudelaire. Schumann, the celebrated composer, died in an insane asylum. Beethoven suffered from chronic middle ear catarrh which was conducive to his untimely deafness; he died from pneumonia. Chopin, the Polish composer, died of tuberculosis of the lungs.

Pasteur suffered a cerebral hemorrhage in his forty-fourth year, in consequence of which one side was paralyzed. Fortunately his brain did not suffer in any way and his ability to work was not impaired. The first inoculation against rabies was administered by him afterward, and following that he enriched mankind with a whole series of valuable discoveries.

A gloomy fate also befell Eminescu, the greatest of Roumanian poets. He was born in 1850 in Botosani, Roumania, and lived as a tramp from early childhood. When 16 years of age he joined an itinerant theatrical company and wandered through many villages and towns. At the age of 18 he was employed at an inn as a cart-driver and in his leisure time he read the classics. Later he studied philosophy in Vienna and Berlin but grew impatient and returned home, where he worked on his poetry for a few years. In 1882 he became insane and was confined in an asylum near Vienna, but his condition had improved so much by 1884 that he again started his poetical work and wrote his best poems, which have been translated into several languages. In 1888 he again became insane and was confined in an asylum in Bucharest, where another patient killed him by crushing his skull with a large stone.

Marriages

OSCAR BERNARD BIERN to Miss Charlotte Egri, both of Huntington, W. Va., at Santa Fe, N. M., August 24.

DONALD FRASER MCDONALD to Miss Loraine Lancey, both of Detroit, at Patchogue, N. Y., September 4.

DONALD WATSON CADY, Pasadena, Calif., to Miss Evelyn Cokefair of New Rochelle, N. Y., August 7.

JAMES ORVILLE THREADGOLD, Belle Fourche, S. D., to Miss Margaret Klamper at Groton, August 12.

ROY S. BARNSBACK, Edwardsville, Ill., to Miss Mabel G. Lawder, at Kansas City, Mo., August 31.

ROBERT KENNETH GUSTAFSON to Miss Dorothea Hoen Pearce, both of Baltimore, August 31.

JAMES J. GORMAN to Miss Nell Mariam Smith, both of El Paso, Texas, June 29.

GEORGE LORENZ, JR., to Miss Elinor Lloyd, both of Philadelphia, August 28.

SAM A. SCHERL, New York, to Miss Jeanette Zinder of Brooklyn, July 21.

JOHN S. PEREKHAN to Miss Mildred Fox, both of Chicago, September 5.

Deaths

Benjamin Meade Bolton, New York; University of Virginia Department of Medicine, Charlottesville, 1879; at one time assistant and associate, Johns Hopkins University; professor of hygiene and bacteriology, South Carolina College; professor of pathology and bacteriology, University of Missouri and the University of St. Louis; formerly director of the laboratory of the boards of health of Philadelphia and of New Jersey; served with the U. S. Bureau of Animal Industry, Washington, D. C., the Maryland Agricultural Station, and the Cuban Agricultural Experimental Station; bacteriologist to the Rhode Island Board of Health; pathologist to the New Samaritan Hospital, Sioux City, Iowa, 1920-1921, and since 1921 pathologist to St. Joseph's Hospital, Paterson, N. J.; aged 72; died, August 12, of coronary thrombosis and cerebral hemorrhage.

Fred Herman Bloomhardt ✠ Lieut. Colonel, M. C., U. S. Army, Kansas City, Mo.; University of Pennsylvania School of Medicine, Philadelphia, 1898; served during the World War period as captain, major and lieutenant colonel; was commissioned lieutenant colonel in the regular army medical corps in 1920; aged 54; died suddenly, August 23, while inspecting Camp Pike, near Little Rock, Ark., of a ruptured gastric ulcer.

William Frederick Howat ✠ Hammond, Ind.; University of Pennsylvania School of Medicine, Philadelphia, 1892; past president of the Indiana State Medical Association and the Lake County Medical Society; served during the World War; member of the school board, 1903-1910; aged 60; formerly on the staff of St. Margaret's Hospital, where he died, August 27, following an operation for perforated duodenal ulcer.

George D. Haworth, Kokomo, Ind.; Indiana University School of Medicine, Indianapolis, 1911; member of the Indiana State Medical Association; formerly secretary of the Hamilton County Medical Society; aged 42; died, in August, at the Good Samaritan Hospital, of injuries received in an automobile accident.

Charles O. Jackson, Bath, N. Y.; College of Physicians and Surgeons, Baltimore, 1887; member of the Medical Society of the State of New York; health officer of Cameron, 1897-1911, 1918-1923, of Rathbone, 1902-1911, and of Bath since 1926; aged 66; died suddenly, August 12, of heart disease.

William A. Wasson, Greenville, N. Y.; University of Buffalo School of Medicine, 1872; member of the Medical Society of the State of New York; past president of the Greene County Medical Society; for many years health officer of Greenville; aged 77; died, July 17, of cerebral hemorrhage.

Harvey R. McCurdy, Coshocton, Ohio; Western Reserve University School of Medicine, Cleveland, 1889; member of the Ohio State Medical Association; past president of the Coshocton County Medical Society; first president of the Coshocton Hospital board; aged 70; died, July 1, of pneumonia.

James Buchanan Siggins ✠ Oil City, Pa.; University of Michigan Medical School, Ann Arbor, 1883; member of the American College of Surgeons; formerly mayor of Oil City; on the staff of the Oil City Hospital; aged 72; died, July 22, of septicemia.

John R. Collins ✠ Nowata, Okla.; Chattanooga (Tenn.) Medical College, 1907; secretary of the Nowata County Medical Society; aged 50; died, August 13, at St. Joseph's Hospital, Kansas City, Mo., of complications, following an operation for appendicitis.

Charles Perry Templeton, Brandon, Man., Canada; Queen's University Faculty of Medicine, Kingston, 1906; served during the World War; aged 45; died, June 12, of injuries received when the automobile in which he was driving overturned.

William W. Hamer, Bellefontaine, Ohio; Medical Department of Butler University, Indianapolis, 1881; member of the Ohio State Medical Association; aged 78; died, August 21, of angina pectoris, while on a camping trip in Northern Canada.

John Linn Irwin, Detroit; University of Michigan Medical School, Ann Arbor, 1889; formerly instructor in toxicology, Detroit College of Medicine; health officer of Detroit, 1899-1903; aged 69; died, August 13, of cerebral hemorrhage.

Albert Napier White, South Otselic, N. Y.; Queen's University Faculty of Medicine, Kingston, Ont., 1886; aged 66; died, July 10, at the home of his son in Syracuse, of diabetes mellitus, chronic endocarditis and angina pectoris.

Charles H. Maxwell, Dakota City, Neb.; Rush Medical College, Chicago, 1883; member of the Nebraska State Medical Association; on the staff of St. Joseph's Hospital, Sioux City, Iowa; aged 68; died, July 19, of arteriosclerosis.

Robin Adair, Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1903; member of the Medical Association of Georgia; also a dentist; aged 51; died, April 26, at Forsyth, of injuries received in an automobile accident.

Charles Sumner Millet, Brockton, Mass.; Harvard University Medical School, Boston, 1880; member of the Massachusetts Medical Society; aged 71; died August 19, of acute pyelonephritis and cerebral arteriosclerosis.

Roger Nelson Cresap, Bonaparte, Iowa; Kansas City (Mo.) Medical College, 1885; aged 72; died, August 7, at St. Joseph's Hospital, Keokuk, of chronic endocarditis, following recurrent attacks of acute rheumatic fever.

Ethel Edgerton Hurd, Minneapolis; University of Minnesota College of Homeopathic Medicine and Surgery, 1897; aged 84; died, August 20, at St. Andrews, N. B., Canada, of carcinoma of the liver and duodenum.

Lorenzo P. Bollard, Milwaukee; Bennett College of Eclectic Medicine and Surgery, Chicago, 1885; aged 71; died, August 21, of injuries received when he was struck by an automobile the week before.

George Bower Tope, Downers Grove, Ill.; Rush Medical College, Chicago, 1896; on the staffs of the West Suburban Hospital, Oak Park, and the Hinsdale (Ill.) Sanitarium; aged 54; died, September 2.

John A. Wright, Toledo, Ohio; Miami Medical College, Cincinnati, 1878; member of the Ohio State Medical Association; aged 74; died, August 22, of angina pectoris and acute dilatation of the heart.

Herman Davis McDonald, Dixiana, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1920; aged 35; died, August 25, in the Norwood Hospital, Birmingham, of acute rheumatic fever.

William McC. Enslen ✠ Fort Wayne, Ind.; Fort Wayne (Ind.) College of Medicine, 1890; formerly member of the city council; aged 65; died, August 26, in the City Hospital, Lima, Ohio, of pneumonia.

Roy Lee Grante Keller ✠ Dallas, Texas; Jefferson Medical College of Philadelphia, 1920; on the staff of St. Paul's Hospital; aged 33; was instantly killed, July 4, in an automobile accident.

Brigid Elizabeth Malone Great Falls, Mont.; Central College of Physicians and Surgeons, Indianapolis, 1898; aged about 65; died, March 20, at the Columbus Hospital, of carcinomatosis.

Lewis Lindsay Dyche, Jr. ✠ Utica, Kan.; University of Kansas School of Medicine, 1919; secretary of the Rush-Ness County Medical Society; aged 33; died, April 29, of acute nephritis.

Edward Lionel Marshall, Big Island, Va.; College of Physicians and Surgeons, Baltimore, 1891; member of the Medical Society of Virginia; aged 68; died, May 20, of heart disease.

Allen Lawrence Winter, Pasadena, Calif.; Columbia University College of Physicians and Surgeons, New York, 1900; aged 55; died, January 15, of pulmonary tuberculosis.

Albert Herman Koch, St. Louis; St. Louis College of Physicians and Surgeons, 1913; aged 54; died, August 13, at the Jewish Hospital, following an operation for carcinoma.

John Harvey Stringfield, Franklinton, La.; University of Arkansas School of Medicine, Little Rock, 1916; aged 41; died in August, in a sanatorium at Magee, Miss., of tuberculosis.

Tilman S. Conerly, Bogalusa, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1893; aged 66; died, August 9, of heart disease and lobar pneumonia.

James McMurray, Hubbard, Ohio; Medical College of Ohio, Cincinnati, 1875; formerly member of the board of education; aged 81; died, August 13, of arteriosclerosis.

Allan N. Moore ⊕ Lockport, N. Y.; University of Michigan Medical School, Ann Arbor, 1878; on the staff of the Lockport City Hospital; aged 75; died, June 16, of carcinoma.

Stephen Ridgeway Bebout, Dayton, Ohio; Homeopathic Medical College of Missouri, St. Louis, 1880; aged 73; died, July 30, of mitral regurgitation and aortic stenosis.

Edward Westoby Goodwin, Newcastle, Ind.; University of Michigan Medical School, Ann Arbor, 1865; Civil War veteran; aged 90; died, August 25, of myocarditis.

William Ward Van Valzah, New York; Jefferson Medical College of Philadelphia, 1876; aged 80; died, July 22, at Atlantic City, N. J., of pulmonary embolus.

Charles Otis Robinson ⊕ Atlantic, Iowa; Creighton University School of Medicine, 1912; aged 42; died, July 21, at Minneapolis, of hypertension.

Henry Goodrich Davis, Monroe Center, Ill.; Hahnemann Medical College and Hospital, Chicago, 1883; aged 68; died, August 20, of chronic myocarditis.

David C. Huffman, Poneto, Ind.; Miami Medical College, Cincinnati, 1878; aged 74; died, August 19, at the Wells County Hospital, Bluffton, of uremia.

John Fletcher McAmmond ⊕ Scottsville, N. Y.; Trinity Medical College, Toronto, Canada, 1904; aged 63; died, August 13, of cardiac asthma.

Ernest Ziegler Bower, Scranton, Pa.; Jefferson Medical College of Philadelphia, 1895; aged 59; died, August 3, of uremia and acute nephritis.

Albert Edward Barber, South Bend, Ind.; Queen's University Faculty of Medicine, 1892; aged 60; died, August 21, of pulmonary tuberculosis.

Guy Philander Corwin, Puente, Calif.; University of Minnesota Medical School, Minneapolis, 1889; aged 73; died, February 16, of gastric ulcer.

William Allan Lawrence, Ithaca, N. Y.; Trinity Medical College, Toronto, Ont., Canada, 1903; aged 66; died, July 24, of cerebral hemorrhage.

Henry G. Googe, Fairfax, S. C.; Medical College of the State of South Carolina, Charleston, 1887; aged 76; died, August 18, of senility.

Neal J. Hall, Fairfield, Ill.; Missouri Medical College, St. Louis, 1878; aged 78; died, August 8, as the result of a cerebral hemorrhage.

John B. S. King, Glenview, Ill.; Hahnemann Medical College and Hospital, Chicago, 1883; aged 74; died, August 28, of heart disease.

Daniel Edwin Rausch, Stone Creek, Ohio; Eclectic Medical Institute, Cincinnati, 1907; aged 53; died, August 26, of arteriosclerosis.

William E. Spannagel, Columbus, Ohio; Starling Medical College, Columbus, 1894; aged 61; died, August 26, of cerebral hemorrhage.

William Warren Styles, Los Gatos, Calif.; University of Vermont College of Medicine, Burlington, 1882; aged 71; died, January 24.

Elmer Ellsworth Schwartz, Oak Park, Ill.; Jenner Medical College, Chicago, 1911; aged 63; died, September 1, of carcinoma.

Henry Walter Pierson, South Gate, Calif.; Long Island College Hospital, Brooklyn, 1884; aged 73; died, January 28.

Frank E. Abbott ⊕ Sterling, Mich.; Rush Medical College, Chicago, 1883; aged 70; died, August 10, of heart disease.

Francis L. Keeler, Treece, Kan. (licensed, Kansas, 1901); also a druggist; aged 70; died, July 17, of heart disease.

John S. Howell, Hannibal, Mo.; Missouri Medical College, St. Louis, 1880; aged 71; died, July 7, of myocarditis.

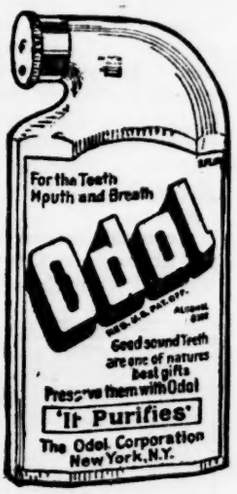
Emery L. Seech, Los Angeles; University of Giessen, Germany, 1922; aged 30; died, January 6.

Bureau of Investigation

MORE MISBRANDED NOSTRUMS

Abstracts of Notices of Judgment Issued by the Food, Drug and Insecticide Administration of the United States Department of Agriculture

Odol.—The Odol Corporation, New York, shipped in June, 1928, a quantity of Odol that the federal authorities declared was misbranded. When analyzed in the Bureau of Chemistry, the preparation was reported to consist essentially of alcohol, 78 per cent, salol and water, flavored with volatile oils, including peppermint. Bacteriologic examination showed that, in the dilution recommended, Odol did not destroy common disease-producing bacteria within five minutes. Various claims made on or in the trade package as to its alleged antiseptic value, its virtue as a preventive of pyorrhea, sore throat, mouth ulcer, and its alleged germ-destroying qualities, were declared false, misleading and fraudulent. In September, 1928, no claimant having appeared, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16006; Issued July, 1929.*]



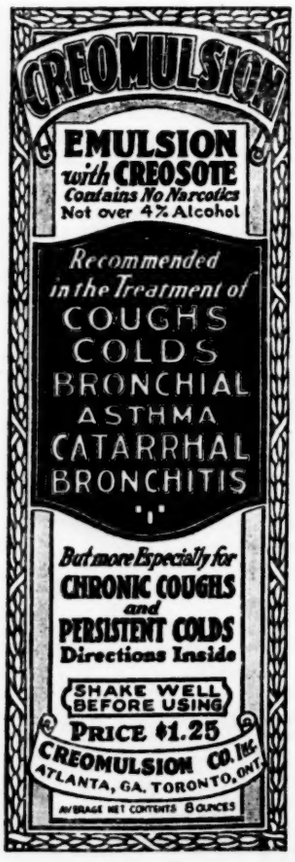
Sorbefacin.—The Foster-Dack Company of Chicago shipped in March and December, 1925, a quantity of Sorbefacin that the federal authorities declared was misbranded. Analyses made in the Bureau of Chemistry showed that the preparation consisted essentially of zinc oxide with traces of menthol and thymol in a petrolatum and fatty acid base. Some of the claims made on or in the trade package for this preparation were that it was "rich in nutrition" and would carry "its antiseptic properties down deep into the tissues," and that it was of value in the treatment of tuberculosis, pneumonia, pleurisy, "and all inflammatory conditions and congestions." These and a great many other claims were declared false and fraudulent, and in February, 1928, no claimant having appeared, judgment of condemnation and forfeiture was entered, and the court ordered that the product be destroyed.—[*Notice of Judgment 15971; Issued June, 1929.*]

Clear-Tone.—The J. T. Kennedy Company, Kansas City, Missouri, in May, 1928, shipped from Missouri to New York a quantity of Clear-Tone that the government officials declared was misbranded. When analyzed by the federal chemists, the product was found to contain 42 per cent of alcohol, with calomel and alum and small amounts of potassium nitrate, camphor and tannin, together with water. The claims on and in the trade package, to the effect that this preparation would remove pimples, acne, eruptions, eczema, barber's itch and skin troubles in general, were declared false and fraudulent. In September, 1928, no claimant having appeared, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16060; Issued July, 1929.*]

Clear-Tone
The Wonder-Working Lotion
Use like toilet water. Is positively recommended for quickly and permanently removing
PIMPLES, BLACKHEADS
Acne Eruptions on the face or body, Barbers Itch and Eczema, Enlarged Pores, Oily or Shiny Skin. Endorsed by druggists, physicians, skin specialists, barbers, and over 100,000 men and women test cases, who succeeded with Clear-Tone after failing with everything else.
FREE Write today for my FREE Booklet, "A Clear-Tone Skin," telling how I cured myself after being afflicted 15 years.
E. S. GIVENS
739 Chemical Bldg. Kansas City, Mo.

Giles Magic Lotion and Blood Purifier.—The Giles Remedy Company, Chicago, shipped in November, 1927, and January, 1928, from Illinois to California a quantity of Giles Magic Lotion and Blood Purifier, which the federal authorities declared was misbranded. Chemical analysis by the government chemists showed that the preparation consisted essentially of camphor and ether in linseed oil. Bacteriologic examination showed that it was not antiseptic or germicidal. The preparation was declared adulterated in that, while it was labeled a germicide and antiseptic, examination proved that it was neither antiseptic nor germicidal, even when undiluted. The statement on or in the trade package, that the stuff contained no poisonous drugs or deleterious matter and that there was "no danger from an overdose," was declared false and misleading. The curative claims, to the effect that it was a blood purifier tonic and a remedy for a very large number of pathologic conditions, were declared false and fraudulent. In August, 1928, no claimant having appeared, judgment was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16079, Issued July, 1929.*]

Creomulsion.—A quantity of this preparation, put out by the Creomulsion Company and shipped in interstate commerce, was declared misbranded under the Food and Drugs Act. When analyzed by the federal chemists, the product was reported to consist essentially of creosote, menthol, a small amount of alkaloidal material, sugar, gum, water and a small percentage of alcohol. The claims made on and in the trade package were many and various. The stuff was recommended in the treatment of coughs, colds, bronchial asthma, catarrhal bronchitis and "Chronic Coughs and Persistent Colds," diarrhea, "gaseous indigestion" and various other conditions. These claims were declared false and fraudulent, since Creomulsion contained no ingredients, or combination of ingredients, capable of producing the effects claimed. In June, 1928, the Creomulsion Company, Inc., of Atlanta, Georgia, having appeared as claimants for the property, judgment of condemnation and forfeiture was entered, and the court ordered that the product might be released to the Creomulsion Company, Inc., upon payment of costs and the execution of bonds totaling $31,800, conditioned that it should not be sold or otherwise disposed of contrary to law.—[*Notice of Judgment 15985; Issued June, 1929.*]



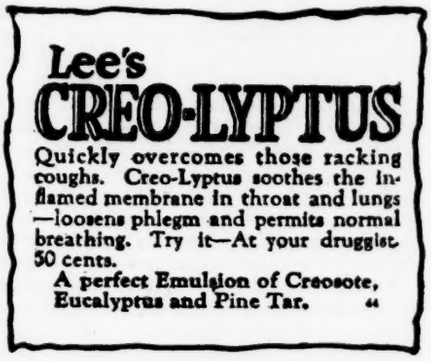
Lax-Krax.—The Cubbison Cracker Company of Los Angeles, California, consigned a quantity of Lax-Krax in March, 1928, to a concern in Denver and the government officials declared that the product was misbranded under the Food and Drugs Act. Analysis of the article showed that it was a bran cracker containing senna. Misbranding was alleged in that the article was adulterated when considered as a food, because it had added to it a deleterious ingredient, senna. It was also declared adulterated, if considered as a drug, in that its strength or purity fell below the professed standard or quality under which it was sold. The following false and misleading statements appeared, among many others, on the trade package:

"100% Food 100% Laxative Now made possible by the Natural Science combination of whole grain, honey, and vegetation baked into a delicious cracker."

"Dr. Hollie's Laxative Foods are made from wholesome herbs and grains. They do not irritate, they contain no salts, aloes, or horse remedies."

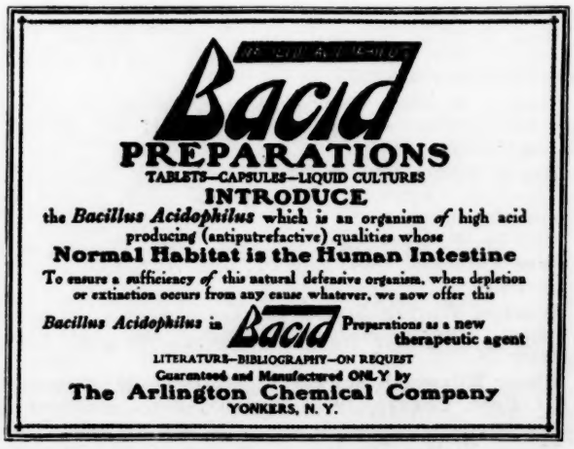
Further misbranding was alleged for the reason that there were many statements regarding the alleged curative effects of the article that were false and fraudulent. In August, 1928, no claimant having appeared, judgment of condemnation and forfeiture was entered, and the court ordered that the product be destroyed.—[*Notice of Judgment 16001; Issued July, 1929.*]

Lee's Creo-Lyptus.—In July, 1928, there was shipped from New York to Georgia a quantity of Lee's Creo-Lyptus that the government authorities declared was misbranded. When analyzed, the preparation was found to consist essentially of ammonium chloride, chloroform, plant extractives, traces of volatile oils (with a possible trace of creosote), sugar, alcohol and water. It was declared adulterated because it was claimed on and in the trade package that it was an active antiseptic and a germicide, when it was neither. It was declared misbranded because the claims for curative effects were false and fraudulent. In October, 1928, the Creo-Lyptus Company, Inc., having appeared as claimant and admitted the allegations of the libel, judgment of forfeiture was entered, and the court ordered that the product be released to the Creo-Lyptus Company, Inc., upon payment of the costs and the execution of a bond conditioned in part that it be relabeled, so as to comply with the law.—[*Notice of Judgment 16087; Issued July, 1929.*]


Lee's
CREO-LYPTUS
Quickly overcomes those racking coughs. Creo-Lyptus soothes the inflamed membrane in throat and lungs—loosens phlegm and permits normal breathing. Try it—At your druggist. 50 cents.
A perfect Emulsion of Creosote, Eucalyptus and Pine Tar.

Bacid Tablets.—The Arlington Chemical Company, Yonkers, New York, consigned in July, 1928, a quantity of Bacid Tablets, which were shipped from New York to California and were declared by the federal authorities to be misbranded. The preparation was labeled in part:

"Bacid Tablets (Bacillus Acidophilus) . . . Contain a highly antiputrefactive and specially selected strain of the *Bacillus acidophilus*, native to the human intestine, in health, and are therefore peculiarly suitable for intestinal therapy. Bacid preparations are prepared under the most exacting scientific control, being rigidly standardized as to viability, purity and strength."


Bacid
PREPARATIONS
TABLETS—CAPSULES—LIQUID CULTURES
INTRODUCE
the Bacillus Acidophilus which is an organism of high acid producing (antiputrefactive) qualities whose
Normal Habitat is the Human Intestine
To ensure a sufficiency of this natural defensive organism, when depletion or extinction occurs from any cause whatever, we now offer this
Bacillus Acidophilus in Bacid Preparations as a new therapeutic agent
LITERATURE—BIBLIOGRAPHY—ON REQUEST
Guaranteed and Manufactured ONLY by
The Arlington Chemical Company
YONKERS, N. Y.

The government charged that the product was adulterated, in that its strength fell below the professed standard under which it was sold, and it was misbranded for the reason that the statements on or in the trade package, "*Bacillus acidophilus*" and "rigidly standardized as to viability, purity and strength," were false and misleading. In September, 1928, no claimant having appeared, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16077; Issued July, 1929.*]

Correspondence

THE ETIOLOGY OF SPRUE: A DISCLAIMER

To the Editor:—For many years I have been a close student of the literature of sprue and since 1916, with the break of a period when otherwise engaged on war service, I have reviewed all the current literature on this disease for the *Tropical Diseases Bulletin.* I have also had the privilege of studying the disease at first hand for the last seventeen years, both in its endemic home and also for the last ten years in London, where I have been mostly engaged in the treatment of this serious malady.

I have noted with alarm the frequent misstatements regarding my views on the etiology of this disease, in that I have been credited with certain statements which have never been made, mostly by those who have, I fear, not consulted my papers in the original but have probably relied on extracts in various journals.

This somewhat perverted view is especially noticeable in studies on sprue emanating from Porto Rico in "An Epidemiological Study on Tropical Sprue in Porto Rico" *(Porto Rico Review of Public Health and Tropical Medicine* **4**, number 8, p. 334). Charles and Dorothy Weiss write as follows:

> The opinions of Kohbrügge, Manson-Bahr and Ashford that sprue is due to an infection by a species of monilia have not been substantiated by recent investigators, including Weiss and Landrón. It is only fair to state, however, that Ashford, while emphasizing the rôle of *M. psilosis*, the inciting agent, believes there is a fundamental "nutritional unbalance" which permits the micro-organism to obtain a foothold.

I hold that this statement does not by any means represent the true facts. In 1915 I presented to the London School of Tropical Medicine a Report on Researches on Sprue in Ceylon, 1912-1914 (Cambridge, University Press), in which I reached certain conclusions as regards the etiology of the disease. The pathologic observations, I wrote, point to an infection with the thrush fungus (*Monilia albicans*) as the cause, but I was cautious to qualify this statement by pointing out that *Monilia albicans* is a frequent terminal infection in other chronic wasting diseases, such as phthisis, cancer and diabetes; while later in my article on sprue in volume III of Byam and Archibald's "Practice of Medicine in the Tropics," page 2255, published in 1923 but written in 1920, I wrote:

> In view of my recent and oft-repeated failures to culture the *Monilia* from the stools of my early cases of sprue, as well as from autopsies in England, it would be well to keep an open mind upon the etiology of this most mysterious disease. The problem is by no means as yet solved, and, to my mind, attention should be focussed upon some infection which is restricted to and causes a superficial erosion of the ileum. Certainly there is no justification for the recent rhapsodies of Martinez (*Bull. Soc. Path. Exot.* **13**: 384-392, 1920) that, owing to work of the Porto Rico school, the validity of *Parasaccharomyces ashfordi* [presumably identical with *Monilia psilosis*] as the etiological agent of sprue has been placed beyond dispute.

Again in 1924, in a paper on the Morbid Anatomy and Pathology of Sprue (*Lancet*, June 7, pp. 1148-1151), I said:

> At present I regard these organisms [*Monilia*] as merely a superimposed secondary infection . . . which is by no means peculiar to sprue. . . . It will be noted that in the two cases under review the organisms were entirely absent, both from the faeces during life and viscera after death, although cultures on appropriate media were made under the most favourable conditions.

Since 1915 Dr. B. K. Ashford (THE JOURNAL, March 6, 1915, p. 810; June 5, 1915, p. 1893; *Am. J. Trop. Dis. & Prev. Med.* **3**:32, 1915) has paid much attention to the relationship of yeasts of the genus *Monilia* to sprue and he has gone so far as to state that there exists a special species of *Monilia* in sprue, *which he has up to quite a recent date* regarded as the etiologic factor and has termed *Monilia psilosis* (the *Monilia* of Sprue). In a Clinical Investigation of Tropical Sprue (*Am. J. M. Sc.* **165**: 157-173 [Feb.] 1923) *Monilia psilosis* is recognized as the causal organism of sprue and claims were later made on the value of a vaccine of *Monilia psilosis* in the treatment of the disease (*Ann. Clin. Med.* **4**:13-20 [July] 1925).

My own views on the classification of yeasts found in the intestinal canal and their attempted classification on a purely arbitrary basis have frequently been stated in my own original report in 1915, p. 93, and in a critique on "Classification of Fungi of the Genus Monilia Gmelin 1791" by Aldo Castellani (Trop. Dis. Bull. **5**:229, 1915), and this view has received confirmation at the hands of F. P. Mackie and G. D. Chitre in their publication entitled Yeasts and Sprue, (*Indian. J. M. Research Memoir* **11**, August, 1928), and also at the hands of F. P. Mackie and N. H. Fairley in other papers originating from the Haffkine Institute, Bombay (*Indian J. M. Res.* **16**:799-825, 1929).

In the most recent work of this series, N. H. Fairley and F. Jasudasan (*Indian J. M. Res.* number **4**, pp. 861-869) write:

> Manson-Bahr (1914) in Ceylon made a detailed study of this subject, and suggested there might be justification for regarding *Monilia albicans* as the cause of the disease owing to its constant presence in the tongue, saliva, intestinal mucus and stools of sprue patients and its rarity in the feces of normal individuals and of those suffering from other forms of diarrhea. Furthermore, their presence afforded a reasonable basis of explanation for the acid gaseous stools characteristic of this disease. Later this writer (1923) failed to culture the monilia from early cases as well as from autopsies on sprue patients dying in England, and in consequence now holds, and has for some years held, the view that the moniliasis is at most only a secondary or terminal infection.
>
> Despite this fact, Michel (in Tice: Practice of Medicine, Hagerstown, Md., W. F. Prior Company **4**: 173-195) and others erroneously continue to quote this authority as supporting the fungoid theory of sprue.

Thus it has been shown that the essential facts elicited during my work in Ceylon have been adequately confirmed and that even fourteen years ago I drew very guarded conclusions regarding the etiologic rôle of yeasts in sprue. Since 1923 I have repeatedly asserted that these fungi bear no primary causal relationship to the disease, the etiology of which awaits discovery, and I have invariably taught similar views at the London School of Tropical Medicine. There is no excuse for the direct misrepresentation of the written word, for in this case it could have been easily prevented by these and other American writers, who could have made themselves familiar with my more recent publications on the subject.

PHILIP MANSON-BAHR, M.D., F.R.C.P., London.

WHEN THE SOUL ENTERS THE BODY

To the Editor:—Regarding the period when the human soul enters the embryo, Dr. Swinton correctly emphasizes (THE JOURNAL, September 7, p. 788) that, according to Catholic theologians, it is present from the moment the spermatozoon unites with the ovum. It may be of interest to your readers to be referred to an ancient authority.

The Roman emperor Marcus Aurelius, who was a great stoic philosopher, was a close friend of Rabbi Yehudah Ha'Nassi, the renowned redactor of the Mishnoh. It is related in the Talmud (Sanhedrin p. 91b) that Marcus Aurelius once asked the rabbi when the soul enters the human body, at the moment of fertilization, or when the embryo is completely formed. The rabbi answered: "When the embryo is formed."

"Is it possible that a piece of lifeless flesh can lie even three days without salt and not become putrefied?" retorted the emperor, "it must be, then, that the soul enters the moment the ovum is fertilized."

The rabbi then agreed with the emperor, and cited a passage from Job 10 to prove that it was so.

ISRAEL H. LEVIN, M.D., Brooklyn.

RESIGNS FROM "MEDICAL INTERPRETER"

To the Editor:—I desire to inform the subscribers of the *Medical Interpreter* that I resigned as editor in December, 1928, and that I am no longer responsible in any manner for this publication or for the actions of its promoters.

ALBERT ALLEMANN, M.D., Washington, D. C.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DIET AND GENERAL TREATMENT OF URINARY CALCULUS

To the Editor:—1. Where can I find an account of dietaries in the treatment of urinary calculus? 2. What scientific or chemical basis is there for prescribing a high meat content in a therapeutic diet for renal calculus? 3. Besides the usual contraindication to pilocarpine, is there any reason why it should not be used to induce sweating in the anuria of renal calculus? M. F. BENJAMIN, Thiells, N. Y.

ANSWER.—1.

Friedenwald, Julius; and Ruhräh, John: Diet in Health and Disease, ed. 6, Philadelphia, W. B. Saunders Company, 1925, pp. 559-592.
McLester, J. S.: Nutrition and Diet in Health and Disease, Philadelphia, W. B. Saunders Company, 1927, pp. 438-487.
Carter, H. S.; Howe, P. E., and Mason, H. H.: Nutrition and Clinical Dietetics, Philadelphia, Lea & Febiger, 1921.

2. There is none. In fact, high meat diet, including glandular organs, is contraindicated in cases of uric acid stones, Hindhede has shown that the urine of vegetable eaters has an increased ability to dissolve uric acid, and a low purine and high vegetable diet may play some part in preventing the formation of uric acid stones.

3. No. However, it is probably better to use heat and wet packs which produce the same result and one does not run the danger from pilocarpine in patients who have cardiac changes, such as myocarditis.

NEOROBIN IN PSORIASIS

To the Editor:—Can you give me any information in regard to the use of neorobin in psoriasis? I recently read an article advising its use in this disease. What are the advantages or disadvantages in its use and what is the dose or any other information you can give which will help in deciding as to its use? Kindly omit my name.

M.D., Connecticut.

ANSWER.—Neorobin is a derivative of chrysarobin and was introduced by Schamberg and Raiziss in the treatment of psoriasis. The chief advantage of neorobin is that it is more active clinically in its reducing properties and that it produces less staining of the skin and the linen (New and Nonofficial Remedies, 1929, p. 283). The dose is approximately one-fifth that of chrysarobin, 0.5 to 1 per cent ointment being effective. It must be made up freshly and deteriorates on exposure to the air and, according to the manufacturers, no animal base, such as hydrous wool fat or lard, should be used in making up the ointment. The chief disadvantage in the use of neorobin is the expense. The results in the treatment of psoriasis are about the same with chrysarobin.

TREATMENT OF COLLAPSE AFTER USE OF PROCAINE HYDROCHLORIDE

To the Editor:—Will you please give me the generally accepted, best treatment for procaine hydrochloride collapse, meaning by this, of course, those cases in which pallor, tremor and sometimes fainting occurs.

CHARLES F. CHANDLER, M.D., Montgomery, Ala.

ANSWER.—Various analeptics, i. e., rapidly acting so-called diffusible stimulants, are employed, such as aromatic spirit of ammonia, 15 drops in a little water every fifteen minutes; or, if the patient is unable to swallow, by inhalation or, for more powerful action, a few drops of it applied to the back of the tongue. Alcoholic "stimulation" is recommended; so is hypodermic injection of camphorated oil.

PERIMETRY

To the Editor:—Please advise me of the medical attitude toward the worth of perimetry as advocated by optometrists and oculists as a means of detecting foci of infection. Please omit name. M.D., California.

ANSWER.—Foci of infection cannot be detected by perimetry or scotometry or any means of ophthalmic examination. When a focus of infection is in a human body there may result various lesions of the eye proper or the optic nerve behind the eye. Such lesions may be in the nature of inflammations of the external parts of the eye, visible to the naked eye of the observer, or of inflammation of the retina and choroid, visible by means of the ophthalmoscope, or of the optic nerve behind the eye, not visible with any method of examination. When the latter occurs, the diagnosis can be made only by careful examination of the visual field (perimetry), whereby certain definite defects are revealed that are known as manifestations of retrobulbar neuritis. Retrobulbar neuritis is not a focal infection but may be the result of a focal infection, syphilis, tuberculosis or certain other disease conditions occurring in the body. The etiology of a retrobulber neuritis cannot be demonstrated by perimetry.

DERMATITIS IN MANUFACTURING WATER-PROOF MATERIAL

To the Editor:—Can you tell me what substance in "rubber compound" used in making water-proof garments will cause a dermatitis and how to prevent it? Please omit name. M.D., Massachusetts.

ANSWER.—Benzene, gasoline, petroleum benzin and coal tar naphtha are the common agents used to plasticize rubber in making water-proof garments. Any of these agents may be the source of a dermatitis among exposed workmen. The skin condition that arises is due in part to the defatting of the skin and in part to direct irritant qualities in these solvents.

This skin condition usually may be prevented if workmen will, at the end of the work period, reapply fats to their skin to replace that removed by the solvents. Hydrous wool fat, oil of theobroma, ointment of rose water or petrolatum have proved successful for this purpose. Occasionally a workman becomes exquisitely sensitive to the action of these irritants, so that the small quantities present in the air in the workroom is sufficient to produce a dermatitis of the face and neck without the necessity of direct contact. Under such conditions it becomes necessary to place such workmen on other duties.

From time to time, there have appeared various items in this department of THE JOURNAL on other ingredients used in the manufacture of rubber which cause dermatitis.

OPERATION FOR CIRCUMCISION

To the Editor:—A man came in today having been away to a genito-urinary specialist for circumcision. Half way up the penis at rest the scar circumscribed the penis, the patient stating that the surgeon had taken out a strip three-fourths inch wide. The foreskin was untouched. The desired result did not seem to have been accomplished, the foreskin still covering three fourths of the glans. It does not appear that this would be improved by time, as contraction will not apparently be any greater. As this was not a familiar operation to me I am writing to inquire whether this is common practice, and if so how its success is regarded. Would retraction of the foreskin to three fourths or even a half be regarded as a satisfactory result? M.D., California.

ANSWER.—The operation referred to is certainly not a standard operation. Circular excision of the integument of the penis does not furnish lasting results on account of the great mobility of the skin covering the shaft of the penis. If, however, the excision is carried to a depth resulting in fixation of the scar to the underlying structures, functional disorders may result. If only a shortening of the prepuce is requested, this may be accomplished by a distal circular partial resection of the foreskin. In such instances an axial dorsal incision is omitted in order to avoid an apron-shaped formation of the remaining prepuce.

HYPERSENSITIVENESS TO HORSE SERUM

To the Editor:—A young woman of average degree of robustness, enjoying fairly good health, became ill with erysipelas. Careful inquiry brought out the fact that no serum had ever been given. About 5 p. m. a dose of E. R. Squibb's erysipelas streptococcus antitoxin was given intramuscularly. A slight reaction was reported by the nurse. The following day the erythema increased and the pulse and temperature remained high. Twenty-four hours after the intramuscular administration, a dose was given intravenously. Within about an hour the patient had a severe chill and vomited, the bowels moved involuntarily, and when seen at 7: 30 p. m. she was in deep coma, the respiration was 56, and the pulse was weak and thready. Epinephrine was given, followed by digalen and caffeine sodiobenzoate. These remedies were administered in full doses until 2: 30 the following morning, when the patient died. While it will be some time before I give a serum intravenously, I would appreciate any information or advice in regard to the use of serums when the severity of the case seems to call for heroic treatment. M.D., Colorado.

ANSWER.—This patient was probably hypersensitive to horse serum. The reaction that followed the first intramuscular injection of the antitoxin should have suggested caution in proceeding with the intravenous administration of the serum. To ascertain that the patient has not previously received horse serum is not suffieient to rule out hypersensitiveness to horse serum, since almost as large a percentage of serum reactions occur in patients not having received previous antitoxic globulin injections as in those so treated (Sophie Spicer, THE JOURNAL, June 2, 1928, p. 1778).

It is never safe to administer horse serum in any form intravenously without previously having determined that the person is not sensitive to it. Determination of serum hypersensitiveness is a simple procedure. If no urticarial wheal is produced locally within thirty minutes after the intradermal injection of from 0.01 to 0.1 cc. of the horse serum, it is reasonably safe to proceed with the intravenous injection of the therapeutic dose. If, on the other hand, the skin reacts with the serum, proper desensitization is indicated before the full therapeutic dose is injected.

POSSIBLE TUBERCULOSIS AND PREGNANCY

To the Editor:—Recently I was called to see a woman, aged 25, who had given birth to a healthy, vigorous child four months before. She had had an increasing abdominal enlargement for four weeks before I saw her. This condition had been painful for two weeks before I saw her. She was in the hospital, and on the basis of the history, physical signs, symptoms and two-hour temperature chart, which showed an evening rise, I made a diagnosis of tuberculous peritonitis. Laparotomy was performed and a little more than a gallon of pale greenish opalescent fluid was removed from the abdominal cavity. The peritoneum, parietal and visceral, was observed to be dull in appearance and "peppered" with minute tubercles. The condition of the patient did not permit exploration of the abdominal and pelvic cavities. She was relieved and showed some improvement. Financial conditions forced her to return to her home as quickly as possible. For about four weeks her temperature, morning and evening, has stubbornly remained at and a little over 100 F., after reaching 101 and a fraction. Her pulse, which has been around 120 ever since I first saw her, has recently dropped to 100, since digitalis was begun. Her appetite, although fairly good, seems to be failing. Since the operation she has had a three-day period of diarrhea and on two occasions there was again demonstrable fluid in the abdomen, but this has almost disappeared. She has received guaiacol, calcium, cod liver oil, iron, quinine, strychnine and as much fresh air as her housing condition, which is crowded, affords. She has no facilities for getting sunshine and has only poor nursing care. The stubborn fever and wasting are the most distressing symptoms at present. What do you advise in the treatment of this case? Please omit name and address.

M.D., Georgia.

ANSWER.—The first thing that suggests itself is a possible lung tuberculosis. To clear up this point, an examination of the chest should be made. If the operation was done under ether there is a possibility of tuberculosis having been lighted up in the lungs. Roentgen examination should not be omitted. On the assumption that the disease is confined to the abdomen, the best chance of improvement lies in direct sunlight to that portion of the body, at first five minutes daily, the duration being increased as rapidly as possible without causing a burn. It is unfortunate that there are no available facilities for sun treatment. It must be remembered that pregnancy often causes exacerbation of a latent tuberculosis.

TREATMENT OF PARALYSIS AFTER CEREBRAL HEMORRHAGE

To the Editor:—Kindly give me some information concerning the following patient: A man, aged 60, had a cerebral hemorrhage about ten months ago with resulting hemiplegia. There is some improvement in the movements of the arm and leg, but he cannot walk any distance without some one holding him. He can walk a few steps with the aid of a cane. The blood pressure is about 180. At present he is taking only iodides. Is there anything that can be done to assist in the restoration of muscular power in the affected arm and leg? He has been having electrical massage. Would strychnine be useful? Please omit name.

M.D., Michigan.

ANSWER.—The indications for the treatment of paralytic extremities resulting from cerebral hemorrhage are, first, the prevention of contractures and ankylosis of the joints; secondly, preservation of muscle tissue and prevention of fibrosis; and, thirdly, reeducation of the muscles.

The first indication is met by daily passive movements of all joints and at times splinting. When contractures have formed, splints that may be adjusted as to increasing the angle of a joint are of service. The second indication is met by massage and electrotherapy. The latter should consist of faradic or galvanic stimulation of the muscles, sufficient current being used to produce a contraction of the muscle. This is essential, and any form of electricity that does not produce a contraction of the muscle is useless. The sinusoidal current may be employed when a relatively painless form of current is desired.

Most important of all are methods of reeducational exercise. Simple procedures, such as the employment of peg boards, cut out puzzles or building blocks are useful. Copying geometrical figures along a grooved design, individual movements of the fingers and finally writing should be employed.

Patience, perseverance and prevention of fatigue are the keynotes of treatment.

MECHANISM OF RESPIRATION AND HEART ACTION AFTER RESPIRATORY PARALYSIS

To the Editor:—1. What is the record of heart action from the beginning of respiratory paralysis? How is that heart action characterized clinically? 2. During respiratory paralysis from asphyxia from drowning in the water for twenty-five minutes, is resuscitation possible with artificial respiration when there is complete standstill of the heart? 3. Please explain the mechanism relation of the respiratory to the cardiac center.

L. M. ROSE, M.D., Santa Clara, Calif.

ANSWER.—1. The behavior of the heart in asphyxia has been investigated by a number of observers, especially since the advent of the electrocardiograph. The heart rate in asphyxia becomes slower, the pacemaker moves from the sinus node to the auriculoventricular node, and finally there is dissociation of the auricles and ventricles, each operating independently. Clinically, these things would be manifested by a decreasing heart rate with a sharp drop to thirty per minute or less when dissociation takes place. The rate continues to fall until all clinical evidence of heart action disappears.

2. It may be possible to resuscitate an individual who has been submerged in water for twenty-five minutes and for even longer periods, although the upper limit is five minutes in the vast majority of cases. Apparent complete cardiac standstill on one examination is an unsafe guide. Industrial organizations instruct their workers to use artificial respiration for at least four hours in all cases of asphyxia, regardless of the apparent clinical condition.

3. The function of the respiratory and cardiac centers are not analogous. In fact, there is no cardiac center in the same sense that there is a respiratory center. There are centers in the brain that have to do with certain functions of the heart but not with the sum total of its activity. With paralysis of the respiratory center the lungs cease to function at once. With "cardiac center paralysis" the heart continues to beat because of the inherent properties of the heart muscle itself. In respiratory paralysis the heart continues to beat until there is destructive anoxemia of the heart muscle, and the heart stops from lack of nutrition. When the heart is suddenly put out of commission, as in electrical shock, respiratory paralysis comes on when the deficient circulation causes a destructive anoxemia of the respiratory center.

TREATMENT OF INFECTED KIDNEY

To the Editor:—Please outline treatment to prevent recurrence of bacillary infection of the bladder (colon bacillus cystitis) from infected (colon bacillus) right kidney in women.

EDWARD JABBOTT, M.D., White Plains, N. Y.

ANSWER.—The best way to prevent an infection of the bladder from an infected kidney is to clear up the infected kidney. Persistence of infection in a kidney nearly always means interference with drainage, or the presence of disease processes keeping up the infection, such, for example, as stone in the kidney or renal tuberculosis.

The correct method of procedure in this case would be to perform cystoscopy, catheterize the ureters, take roentgenograms, then make pyelograms and, finally, made cultures from the urine and examine carefully for tubercle bacilli. A patient with this history should be subjected to a careful and complete urologic survey to determine the reason for the persistence of the infection in the kidney. Unless there is stasis in the bladder, after the kidney becomes normal the bladder condition automatically clears up.

TREATMENT OF NONUNION OF FRACTURES

To the Editor:—We are having considerable trouble among the colored employees who have received fractures followed by nonunion of the bones. These patients usually show a four plus Wassermann reaction and are promptly given a course of arsphenamine and in addition tablets of parathyro calx 2 per cent are given. We have found it necessary to increase the number of courses of arsphenamine and find no benefit as to the end-result. Kindly advise me the results, if any, of other treatment aside from resorting to an open operation by bone graft. I have been recently advised that small doses of thymus extract would be very beneficial, and the treatment of para-thyro calx was withdrawn and this substituted. We now find that since thymus extract treatment was administered there has been a softening of callus and I am wondering whether this drug would have the effect of bringing about this condition. Please omit name.

M.D., Georgia.

ANSWER.—No statistics are given, so that one cannot decide whether the correspondent is having any higher percentage of nonunion than is normally found in a large series of fractures. Possibly some are delayed unions. Colored people are not known to possess any especial tendency toward nonunion. If syphilis is present it should of course be treated not only with arsphenamine but also with mercury for bone cases. There is

no real evidence that syphilis, or at least a positive Wassermann reaction, is conducive to nonunion. There is no evidence that para-thyro calx can influence the proportion of blood calcium in an average individual, or, if it did, that the rise in blood calcium would insure prompt bony union. The action of thymus extract comes into the same category—beneficial action cannot be definitely claimed for it.

The treatment of fractures in these patients should be orthodox; i. e., reasonable apposition, proper splinting which really immobilizes the two adjacent joints, and a sufficiently long period of immobilization. The after-treatment includes muscular activity, massage or other therapeutic measures but avoids too early, unguarded weight bearing, use, or freedom from splintage which invites cross-strain on unsolidified callus. For true nonunion, operative treatment may be indicated with freshening and apposition of bone surfaces. The mere implantation of a bone transplant does not insure a successful result.

PSYCHIC DISTURBANCE FOLLOWING FRIGHT AND EXHAUSTION

To the Editor:—I have under observation a World War veteran who presents the following history and complaints: His personal history is entirely negative as regards any illness outside of an occasional cold or an attack of influenza. His occupation has always been farming until the last three years, during which he has worked in one of the local rubber shops. In the early part of the war he was engaged in hauling supplies up near the front lines with a wagon team. One day a shell exploded near by, frightening the team and causing a runaway. He had the lines wrapped about his forearms and was standing on the ground when this happened. Being unable to release his arms, he was forced to run with the team, which he did until he was completely exhausted. He then fell to the ground and was dragged about a quarter of a mile before the team stopped. At the time he did not seem to have any serious injury other than some bad bruises about his body and returned to duty after resting for a few hours. However, he did notice a constricted feeling about the upper part of the abdomen and a shortness of breath for several days. Intermittently since this accident happened he has complained of not being able to "fill his lungs with air" and he also has a spasm of the rectus abdominis muscles which causes a forcible expulsion of air from the lungs. This muscle spasm is entirely involuntary; it occurs every two or three minutes and is very annoying to the man. It resembles a hiccup except that there is a forceful exhalation instead of inhalation when it occurs. His present attack has been present for four weeks. Physical examination is entirely negative. This spasm can be caused by tapping the abdomen over the recti with the finger. The blood Wassermann reaction is negative. Sedative drugs such as barbital and bromides have no effect. The spasm also occurs while he is asleep. What are the possible causes of this spasm? Do you think that it may be a "habit spasm"? What can be done for it? If nothing else stops it would it be advisable to attempt to sever a part of the nerve supply to each rectus just lateral to the muscle? The man is in a pitiable condition from this constant spasm and something must be done to aid him. I do not believe he is malingering in an attempt to collect war benefits. Please omit name.

M.D., Ohio.

ANSWER.—The story and examination of this patient suggest that the disturbance is one of the psychic level and as such should be investigated from the psychiatric point of view. A thorough analysis of the individual as a whole should be carried out with the proper technic, and when the underlying psychopathology is determined the treatment will be evident. Severing the nerve supply to the rectus muscles would probably not be of help as that simply abolishes one pathway by which the psychic disturbance is exteriorized. A new somatic manifestation would soon appear.

MUM — NONSPI — ODORONO

To the Editor:—I have a patient who has a dermatitis of the underarm and also of the scalp which she seems to think may have been caused by the application of one of the deodorizers commonly sold on the market, such, for instance, as "Mum," "Nonspi" or "Odorono." For my own information and that of the other members of the profession, I thought it might be worth while if you would include in Queries and Minor Notes an analysis of one or two of these perspiration preventers and deodorizers, if possible. Perhaps an analysis has appeared before, but I have missed it. Please do not include my name.

M.D., Colorado.

ANSWER.—According to the report of the Connecticut Agricultural Experiment Station in 1914, Mum was found to contain essentially zinc oxide, 14.3 per cent, and benzoic acid (possibly derived from benzoin), 3.3 per cent, with an undetermined fatty base. According to the Druggists Circular Formula for 1915, Mum contained salicylic acid, zinc oxide, glycerin, water, a tallow-like fat and traces of essential oils. When tested some time later in the A. M. A. Chemical Laboratory, the product was found to contain 3 per cent benzoic acid and not salicylic acid.

According to information available, the base of Nonspi is aluminum chloride dissolved in water containing some potassium and iron.

Odorono was analyzed in the A. M. A. Chemical Laboratory in 1915. At that time it was found to contain a 33 per cent solution of hydrous aluminum chloride. From time to time THE JOURNAL has reproduced formulas for astringent solutions composed of 25 per cent of aluminum chloride ($AlCl_3.6H_2O$).

TREATMENT OF LUPUS VULGARIS

To the Editor:—A colored woman, aged about 30, has been suffering from lupus vulgaris for five years. What treatment would you advise?

ALEXANDER IRVINE, M.D., McDowell, W. Va.

ANSWER.—The treatment of such a case of lupus vulgaris resolves itself, first, into the supervision of the patient's general health. She should receive plenty of nutritious food, fresh air, sunshine and outdoor exercise, and should be given cod liver oil, iron, quinine and other tonics. Tuberculin injections, preferably of new tuberculin, often prove of value as an adjuvant in rendering the local measures more effectual. General ultraviolet irradiation of the body is also one of the most valuable methods of general treatment, these baths being given two or three times weekly in proper dosage. Locally, in extensive cases such as this one, it is advisable in the beginning and for a variable number of weeks or months to use comparatively mild measures, such as an ointment composed of equal parts of oleate of mercury and Lassar's zinc paste, N. F., to which has been added 4 per cent each of salicylic acid and sulphonated bitumen, N. F. If these measures do not manage the case successfully, one is justified in using more drastic ones, such as a 25 to 50 per cent strength salicylic acid or pyrogallol ointment, applied on surgical lint and changed twice daily. After from one to several weeks, when sufficient reaction has taken place, a soothing ointment should be used until healing has occurred. If the disease is still in evidence, this procedure may be repeated. Good results also are often obtained by painting the nodules or patches with liquid acid nitrate of mercury or even with trichloracetic acid, but these agents also are responsible for considerable discomfort. Individual nodules usually are successfully treated by freezings with carbon dioxide snow and almost always by fulguration. Small lesions often may be totally excised without great disfigurement. Finsen light therapy is the treatment of choice, but this usually can be carried out satisfactorily only in a specially equipped institution. Radium and roentgen irradiation are not to be recommended generally because of the scarring that results from the amount of treatment necessary in this disorder.

ABSENCE OF SALIVA

To the Editor:—An active man, aged 67, whose general physical condition is good, has for about four years been troubled with a complete absence of saliva during sleep at night. He awakens a number of times each night and always his lips, tongue and throat are dry. He is not a mouth breather and there is no obstruction of the nasal passages. Often about bedtime, if he is particularly weary, his lips and tongue are not normally moist, although normal during waking hours, and are not affected if he should have a sleep during the day. Change of diet has no influence on the condition. He has always had good appetite and digestion, and has never been troubled with constipation. Have similar cases been reported in medical literature? Can you give the probable cause, with indicated treatment? Please omit name.

M.D., California.

ANSWER.—Secretion of saliva is a reflex function normally. The main stimuli invoked in this reflex are mechanical and chemical actions on the nerve endings in the mouth, but it can also be evoked from other regions of the body by gastric irritation. It is definitely proved that the salivary glands do not secrete normally when the nerves of these glands are cut. Since nearly all of the body reflexes are decreased and some of them even abolished in deep and restful sleep, it is to be expected that salivation should also be decreased during sleep or possibly abolished, and it is well known that there is a great decrease of saliva in perfectly normal people in deep sleep.

The case cited may be nothing more than unusually deep or restful sleep and therefore practically complete absence of this salivary reflex. However, there may also be some specific impairment either of the reflex itself or of the salivary glands in this patient. This could be determined by recording the amount of saliva produced by vigorous chewing of such a substance as pure paraffin in his waking state and comparing the results with those of a number of other individuals. There is no therapy known that will increase saliva during sleep without at the same time disturbing the sleep. Therapeutic doses of strychnine might be tried as an experiment, but it seems doubtful whether strychnine will produce marked influence on the salivary reflex since the primary action of this drug is on the reflexes of the spinal cord centers and not on the higher centers.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

AMERICAN BOARD OF OPHTHALMIC EXAMINERS: Philadelphia, Oct. 21, 1929. Sec., Dr. William H. Wilder, 122 South Michigan Ave., Chicago. Ill.

ARIZONA: Phoenix, Oct. 1-2, 1929. Sec., Mr. H. P. Mills, 14 North Central Ave., Phoenix, Ariz.

ARKANSAS: Little Rock, Nov. 12-13, 1929. Sec. Reg. Board, Dr. Sam J. Allbright, Searcy, Ark. Sec. Eclec. Board, Dr. Claude E. Laws, 803½ Garrison Ave., Fort Smith, Ark.

CALIFORNIA: Sacramento, Oct. 21-24, 1929. Sec., Dr. Charles B. Pinkham, 420 State Bldg., Sacramento, Calif.

COLORADO: Denver, Oct. 1, 1929. Sec., Dr. Wm. W. Williams, 224 State Capitol Bldg., Denver, Colo.

CONNECTICUT: New Haven (Basic Science Examination), Oct. 12, 1929. Address Connecticut State Board of Healing Arts, Box 1895 Yale Station, New Haven, Conn.

GEORGIA: Atlanta, Oct. 8-9, 1929. Sec., Dr. B. T. Wise, Board of Medical Examiners, Americus, Ga.

HAWAII: October, 1929. Sec., Dr. James A. Morgan, Room 48, Young Building, Honolulu, Hawaii.

IDAHO: Boise, Oct. 1, 1929. Commissioner of Law Enforcement, Hon. F. E. Lukens, State House, Boise, Idaho.

ILLINOIS: Springfield, Oct. 8-10, 1929. Supt. of Regis., Mr. V. C. Michels, Dept. of Regis. & Education, Springfield, Ill.

MAINE: Portland, Nov. 12-13, 1929. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland, Me.

MICHIGAN: Lansing, Oct. 8-10, 1929. Sec., Dr. Guy L. Connor, 707 Stroh Bldg., Detroit, Mich.

MINNESOTA: Minneapolis (Basic Science Examination), Oct. 1-2, 1929. Sec., Dr. E. T. Bell, 110 Anatomy Bldg., Minneapolis, Minn.

MINNESOTA: Minneapolis, Oct. 15-17, 1929. Sec., Dr. E. T. Sanderson, 524 Lowry Medical Arts Bldg., St. Paul, Minn.

MONTANA: Helena, Oct. 1, 1929. Sec., Dr. S. A. Cooney, Board of Medical Examiners, Power Building, Helena, Mont.

NEVADA: Carson City, Nov. 4-6, 1929. Sec., Dr. E. E. Hamer, Carson City, Nev.

NEW MEXICO: Santa Fe, Oct. 14-15, 1929. Sec., Dr. William T. Joyner, 20-21 First National Bank Bldg., Roswell, N. M.

SOUTH CAROLINA: Columbia, Nov. 11, 1929. Sec., Dr. E. A. Boozer, 505 Saluda Ave., Columbia, S. C.

WYOMING: Cheyenne, Oct. 7, 1929. Sec., Dr. W. H. Hassed, Cheyenne, Wyo.

Maryland June Examination

Dr. Henry M. Fitzhugh, secretary of the Board of Medical Examiners of Maryland, reports the written examination held at Baltimore, June 18-21, 1929, and also a special examination. The examinations covered 9 subjects and included 90 questions. An average of 75 per cent was required to pass. Seventy-four candidates were examined and passed. Twelve physicians were licensed through reciprocity with other states and four by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
College of Medical Evangelists		(1929)	87.1
Georgetown University School of Medicine		(1927)	86.8
George Washington Univ. Med. School		(1928) 83.3, (1929)	87.3
Howard University School of Medicine		(1929)	77.8
Rush Medical College		(1926)	89.2
College of Physicians and Surgeons		(1904)	*
Johns Hopkins University School of Medicine		(1924) 83.3, 86.4, (1925) 92.2, (1926) 85.2, (1927) 75.3, 82.2, (1928) 86.4, (1929) 76.6, 78.1, 79.7, 81.4, 81.5, 83.1, 83.2, 83.8, 83.8, 84.3, 84.7, 86, 86.2, 86.5, 86.5, 87.8, 88.6, 88.8, 89, 90.1, 90.5, 91.8, 90	
University of Maryland School of Medicine and College of Physicians and Surgeons		(1927)	87, (1929) 79.7, 79.8, 80.5, 82.2, 85.3, 86.2, 86.8, 87, 87.2, 87.3, 87.8, 87.8, 87.8, 88, 88.3, 88.3, 88.4, 88.5, 88.6, 88.6, 88.8, 89, 89, 89.6, 90, 90.3, 90.7, 90.7, 90.7, 91.1, 91.3, 91.6, 91.7, 92, 92.5
University of Michigan Medical School		(1929)	86.2
St. Louis University School of Medicine		(1929)	83.7
McGill University Faculty of Medicine		(1925)	86.2
Queens University Faculty of Medicine		(1923)	*

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
George Washington University Med School		(1924), (1926)	Dist. Colum.
Howard University School of Medicine		(1927)	Virginia
University of Georgia Medical Department		(1927)	Georgia
Northwestern University Medical School		(1903)	Iowa
Detroit College of Medicine and Surgery		(1922)	Michigan
Washington University School of Medicine		(1912)	Missouri
Cornell University Medical College		(1924)	Penna.
Meharry Medical College		(1926)	Tennessee
Medical College of Virginia		(1916)	Virginia
University of Virginia Department of Medicine		(1919)	Virginia
National Univ. of Athens Faculty of Med., Greece		(1920)†	Ohio

ENDORSEMENT OF CREDENTIALS

Johns Hopkins Univ. School of Med.	(1924), (1926), (1927)	N. B. M. Ex.
University of Maryland School of Medicine and College of Physicians and Surgeons	(1927)	N. B. M. Ex.

* No grades given.
† Verification of graduation in process.

District of Columbia June and July Examinations

Dr. W. C. Fowler, secretary of the Commission on Licensure of the District of Columbia, reports the written examination held at Washington, June 27-28 and July 8-9, 1929. The examination covered 15 subjects and included 94 questions. An average of 75 per cent was required to pass. Forty-one candidates were examined, of whom thirty-six passed and five failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Georgetown University School of Medicine		(1928) 82.9, (1929) 77.6, 78.1, 78.3, 80.5, 80.5, 81, 83.6, 86.3	83.6,
George Washington University Medical School		(1924) (1929) 78.3, 78.7, 79.1, 79.4, 79.9, 80.7, 81, 81.7, 82.5, 84.9, 85.4, 86.7, 86.8, 87.1, 87.1, 87.7	85.5,
Howard University School of Medicine		(1929)	78.3
Northwestern University Medical School		(1928)	78.3
Rush Medical College		(1929)	80.7
Johns Hopkins University School of Medicine		(1929) 91.7,	85.1
Tufts College Medical School		(1909)	75.1
Jefferson Medical College		(1924)	79.3
University of Melbourne Faculty of Med., Australia		(1911)	83.6

College	FAILED	Year Grad.	Per Cent
Georgetown University School of Med		(1928) 69.5, (1929) 71.4,	73.9
Howard University School of Medicine		(1928)	68.1
Medical College of the State of South Carolina		(1917)	72.8

Book Notices

PERSONAL HYGIENE FOR NURSES. Adopted Also to the Use of Students of Physical Education and Other Health Specialists. By John Wymond Miller Bunker, Ph.D., Professor of Biochemistry and Physiology, Massachusetts Institute of Technology, and Clair Elsmere Turner, M.A., Dr.P.H., Professor of Biology and Public Health, Massachusetts Institute of Technology. Second edition. Cloth. Price, $2. Pp. 210, with 15 illustrations. St. Louis: C. V. Mosby Company, 1928.

In this small book are a number of essays on the care of the body and on life in general. The advice is good and is presented in simple, direct statements. There is nothing original about the advice or about the manner of its presentation. Just why a nurse should need the advice more than any one else is not apparent. There are a dozen books on personal hygiene that cover the ground just as satisfactorily and there is nothing particularly in this book that is suitable for nurses and not for any one else.

HANDBUCH DER INNEREN SEKRETION: Eine umfassende Darstellung der Anatomie, Physiologie und Pathologie der endokrinen Drüsen, Herausgegeben von Dr. Max Hirsch. Band II, Lieferung 5: Hermaphroditismus und Geschlechtsumwandlung. Von Prof. Dr. O. Berner. Paper. Price, 17 marks. Pp. 1143-1290, with 21 illustrations. Leipzig: Curt Kabitzsch, 1929.

HANDBUCH DER INNEREN SEKRETION: Eine umfassende Darstellung der Anatomie, Physiologie und Pathologie der endokrinen Drüsen, Herausgegeben von Dr. Max Hirsch. Band III, Lieferung 7: Funktionelle Diagnostik der endokrinen Erkrankungen, Von Prof. Dr. M. Breitmann. Grundlagen der Organotherapie. Von Prof. Dr. H. Much. Paper. Price, 24 marks. Pp. 1763-1978, with illustrations. Leipzig: Curt Kabitzsch, 1929.

These constitute the concluding part of an ambitious work on the endocrine glands, portions of which have been previously reviewed. The present chapters continue the thoroughness in treatment, illustrations, and references to the literature noted in previous sections. The concluding part of volume II is taken up by a chapter on hermaphrodism and sex transformation by Dr. Berner of Oslo. The chapter is comprehensive and conservative; the illustrations are good. The concluding part of volume III contains a chapter on the diagnosis of endocrine disorders by Dr. M. Breitmann of Leningrad, and a chapter by Dr. H. Much of Hamburg entitled "Principles (Grundlagen) of Organotherapy, a Critical and Skeptical Study." The chapter by Dr. Breitmann on the diagnosis of endocrine diseases is developed largely on the basis of the so-called pathology of the constitution and by methods of anthroprometric measurements, a rather philosophical aspect of disease that has come into prominence in recent years in several European clinics. This is an interesting and valuable working hypothesis and when objectively pursued would undoubtedly lead to important contributions; but, judging by the literature in the field, the theory seems to be a greater stimulus to talking and writing than to

objectively controlled work. For example, it does not seem helpful, at present, to classify hyperthyroid patients as Dr. Breitmann does (p. 1827) into "amphotonic," "vagotonic" and "sympathicotonic" Basedows, especially in view of the present uncertainty as to the nervous control of the thyroid itself as well as to special and differential effect of the thyroid hormone on the various parts of the nervous system. The chapter by Dr. Much is largely a restatement of matters frequently better handled in previous sections of the work. Taken as a whole, this ambitious monograph by many authors under the general editorship of Dr. Hirsch must be considered a serious and valuable contribution to biology and medicine.

MEDICO-LEGAL INJURIES. By Archibald McKendrick, F.R.C.S., Medical Referee under Workmen's Compensation Act. Cloth. Price, $7. Pp. 341, with 65 illustrations. New York: Longmans, Green & Company, 1927.

The author wrote this book for the assistance of those concerned with claims for compensation or damages arising out of personal injuries. In his effort to bridge the gulf between the nonmedical mind and the technical terminology of ordinary medical textbooks, and to treat the entire subject in as simple and nontechnical a manner as possible, he has succeeded admirably, and to make sure of accomplishing that end he has included an adequate glossary of medical terms. The simplicity and directness of the author's style have not, however, lessened the value of the book for the professional reader. Any one having to do with the adjudication of personal injury cases will find much of profit in the book, particularly the author's correlation of the anatomy and pathology of injuries with the principles of physics underlying them.

PSYCHIATRY IN INDUSTRY. By V. V. Anderson, M.D., M.A., Director of Medical Research, R. H. Macy & Co., Inc. Cloth. Price, $4. Pp. 364. New York: Harper & Brothers, 1929.

In the past, industry has found in medicine an aid toward increased efficiency. If the worker is in the best possible physical condition, his productiveness is increased. Now psychiatry is also finding usefulness in this field. The introduction to this book points out that industrial psychiatry is not a method for finding the only position into which the worker may be fitted but that its purpose is first to determine whether the worker will fit into any position which at the moment may be available and secondly to make such readjustments as are necessary when the worker fails to conform to his industrial placement. The material has been collected during a four year study of the personnel problems in a large department store. There are chapters on such subjects as work failures, the selection of executives and scientific job placement. A psychiatric guide is given for employment interviewers. Many case reports are abstracted which illustrate how well the various types of psychiatric difficulties may be remedied. There are many tables dealing with the qualifications found in good and poor sales clerks. Many of the conclusions are fairly obvious, while others are rather unusual. Thus, it is found that the aggressive individual is a better sales clerk than the retiring one, that physical defects are a handicap to sales ability, and that intelligence plays a part in the selling ability of clerks. These are all obvious conclusions. On the other hand, it is found that the amount of schooling is not a vital factor in producing good or bad sales clerks. The author states that whatever value the book may have is probably in its insistence on a method of approach and formal discipline in routine personnel procedure. Those interested in personnel problems in industry will probably find much of value to guide them in their studies; but to the psychiatrist and the general reader, the facts presented will have little interest.

DENTAL JURISPRUDENCE. An Epitome of the Law of Dentistry and Dental Surgery. By Elmer D. Brothers, B.S., LL.B., Professor of Medical and Dental Jurisprudence in the University of Illinois. Second edition. Cloth. Price, $2.25. Pp. 246. St. Louis: C. V. Mosby Company, 1928.

This is a succinct but comprehensive statement of the law as it relates to the practice of dentistry. It should be mastered by all students of dentistry before graduation. Dentists already in practice may find in it much that is new to them as to the legal aspects of their profession.

THE MEDICAL DEPARTMENT OF THE UNITED STATES ARMY IN THE WORLD WAR. Volume III: Finance and Supply. By Col. Edwin P. Wolfe, M.C. Prepared under the direction of Maj. Gen. M. W. Ireland, the Surgeon General. Cloth. Price, $3. Pp. 935, with 50 illustrations. Washington, D. C.: Supt. of Doc., Government Printing Office, 1928.

Shortly after the surgeon general's office was established in 1818, the war department defined the method of procuring supplies needed in the care of the sick. An important part of the method was that supplies should be ordered on an annual requisition. These, when summarized as they came from various posts, formed the basis of the annual estimate of supplies for the medical department. From time to time changes were made in the list of and in the method of procuring supplies. The Spanish-American War came along and found the supplies of the medical department at a low ebb. It was difficult to meet the need for rapid expansion. Criticisms of this and other departments of the army were made and the President appointed the Dodge Commission to conduct an exhaustive investigation. The conclusions of the commission which pertained to the medical department were that it had practically no hospital furniture and few medicines when the war came, and that the strict economy with which the department had been administered for years prevented the accumulation of reserves. The medicines on the supply table were said to be too restricted. The shortage of supplies was due to the want of knowledge of untrained officers. The commission believed that it was impossible for the department to operate without undue regard to cost in view of its years of strict attention to economy. The medical department took seriously the recommendations of the Dodge Commission, so that when the World War came there were some medical officers who were expert in the procurement of supplies. One of them was Col. Edwin P. Wolfe, who prepared this part of the history. It is a credit to the medical department that no serious complaints were made during or following the World War.

The average physician perhaps will find this volume uninteresting. It has to do entirely with medical supplies used during the Great War. All through the pages it is evident that those in charge of securing, distributing, inspecting and repairing the mountain of supplies were well versed in the business. Before the war, accounting for medical property was burdensome to an officer whose chief interest was in clinical work. The rigid system of accounting for property was in large part retained in the United States during the war, but in France they did not have to account to the surgeon general in Washington for property. Imagine the difficulty of estimating the medical needs of an army program which, in February, 1918, exceeded 1,500,000 men, and in March contemplated 1,725,000 men, and in May, 2,230,000 men, and so on almost monthly. A program promulgated in July, 1918, contemplated a military force which by June, 1920, would exceed 5,500,000 men. Each successive increase in the program called for a change in the estimates for the medical supplies and in the production program to meet them. For example, standard mattresses for the medical department previous to the war were made of pure South American hair. Lack of ships made this quality of hair hopelessly inadequate. It was necessary to adopt a cotton mattress. But the ordnance department required so much linters for the manufacture of ammunition and the demand for mattresses became so heavy that the supply of linters became inadequate. The specification for mattresses again had to be changed. The medical department at one time was in the market for 250,000 mattresses for the standard bed and for 400,000 mattress pads for a smaller sized cot used at the base and evacuation hospitals. The chapter on the manufacture, assembling and distributing of ambulances is interesting. Generally, the roentgen equipment provided was satisfactory. The American Roentgen Ray Society appointed a committee to consider ways and means whereby the members of the society could render most effectual service to the government, and one of these was the standardization of x-ray apparatus and equipment. Medical procurement during the war included such things as delousing apparatus, disinfectors, automobile trailers, wheel litters and other unusual machines; the leasing of buildings for supply depots, and the purchase of veterinary equipment and of millions of first aid packets. The estimate for gauze for the army based on the quantity of surgical dressings asked for by General Pershing amounted to 320,000,000 yards for one year.

DISEASES OF CHILDREN. Edited by Hugh Thursfield, D.M., M.A., F.R.C.P., Physician, Hospital for Sick Children, Great Ormond Street, and Donald Paterson, M.D., M.R.C.P., Physician to Out-Patients, Hospital for Sick Children, Great Ormond Street. (First edition edited by Sir Archibald E. Garrod, K.C.M.G., D.M., M.A., the late Frederick E. Batten, M.D., M.A., F.R.C.P., and Hugh Thursfield, D.M., M.A., F.R.C.P.). Second edition. Cloth. Price, $13. Pp. 1106, with 205 illustrations. New York: William Wood & Company, 1929.

The progress made in the treatment of diseases of children has outstripped in the last decades even the great advancement that has occurred in the field of medical science. As a result, much that has been written concerning pediatrics has needed to be revised. This book is a second edition of a work first published in 1913. Many portions have been entirely rewritten, while additions have been made to other sections. Valuable material has been included that has been culled from the more recent periodical literature. Several new chapters have been added, including one by H. C. Cameron on the functional diseases of the nervous system. The management of the child has become an increasingly difficult problem, and such material as Dr. Cameron has contributed to this field is well worth consulting. The general arrangement of the book and much of the original material have not been disturbed in the revision, but these portions have been left unaltered only because the discussions of the various subjects are clear and concise but, nevertheless, complete. A collection of monographs such as this makes a book that is most useful. Occasional revisions of such books keep them from becoming sources of misinformation. Those seeking for clearly presented facts concerning the diagnosis and treatment of the diseases of children will find them in this book.

LE PROBLÈME DES GLANDES À SÉCRÉTION INTERNE. Les propriétés physico-chimiques et pharmacodynamiques des hormones. I: L'hypophyse. Par H. Penau, docteur ès sciences naturelles pharmacien de 1re classe, L. Blanchard vétérinaire sanitaire du département de la Seine, et H. Simonnet, docteur ès sciences naturelles. Boards. Price, 45 francs. Pp. 249, with illustrations. Paris: Les Presses Universitaires de France, 1929.

This is a comprehensive and reliable summary of the physiologic and pharmacologic action of various extracts or hormones from the two parts of the pituitary gland so far studied. It is of interest to and may be read with profit by the internist as well as the laboratory worker.

MALARIAL PSYCHOSES AND NEUROSES: With Chapters Medico-Legal, and on History, Race Degeneration, Alcohol, and Surgery in Relation to Malaria. By William K. Anderson, M.D., F.R.F.P.S., Visiting Physician to the Eastern District Hospital, Duke Street, Glasgow. Cloth. Price, $13. Pp. 395, with 18 illustrations. New York: Oxford University Press, 1927.

The title of this book gives hardly a fair indication of its contents. It discusses the medical and sociological aspects, not of malarial psychoses and neuroses alone, but of malarial infections generally. One chapter is related to malaria, another to malaria in history, and a third to the effect of malaria on character and on race degeneration. The malarial parasite, the pathology of malaria and the clinical pathology of the parasympathetic, sympathetic and endocrine glands are discussed in three chapters. One chapter is devoted to latent malaria, one to periodicity, one to malaria and alcohol, one to surgery and malaria, and one to treatment. Chapters are devoted to coma, stupor and delirium, conditions not necessarily associated with psychoses and neuroses but symptomatic of various other disorders. One chapter is devoted to amnesia. Three chapters are devoted to a discussion of malarial nerve conditions, covering such disorders as meningitis and signs of meningeal irritation and meningism of malarial origin, malarial hemiplegia, aphasia due to malaria, paralysis agitans, epilepsy or the occurrence of fits in malarial subjects, cases resembling tetanus, cerebellar syndromes, tremors, disseminated sclerosis, polyneuritic syndromes, herpes zoster, lesions of the spinal cord, disturbances of vision, ear infections and disturbances of taste and smell. The conditions ordinarily classed as psychoses and neuroses, discussed by the author, are melancholia, confusional insanity, delusional insanity, clinical dementia praecox, mania, psychasthenia and hysteria, exhaustion psychosis, dementia and neurasthenia. The discussion of the medicolegal aspects of malaria covers not only illegal conduct arising from malarial psychoses but also malaria versus alcohol as a cause of mental or physical ill health, accidental death from rupture of the spleen, sudden death from malarial necrosis of the suprarenals, malaria versus trauma, accidental death following direct infection with malarious blood in dental work or by blood transfusion, and rare forms of accidental death from muscle rupture. Thirty-five pages is devoted to references, and twelve to indexes of authors and of subjects. It is apparent, therefore, that in this book we have an exhaustive survey of malarial infection from various unusual points of view, presenting the disease as one of the most protean of maladies. How far to agree with the author in attributing specifically to malarial infection the various psychoses and neuroses attributed by him to that disorder, and how far to believe that psychoses and neuroses of like characters might have arisen in the patients whose case histories are set forth if the same persons had been subjected to exhaustion from conditions other than malarial infection, are matters that each reader will have to determine for himself.

A STUDY OF EDUCATIONAL ACHIEVEMENT OF PROBLEM CHILDREN. By Richard H. Paynter, Ph.D., Professor of Social and Abnormal Psychology, Long Island University, and Phyllis Blanchard, Ph.D., Psychologist, Philadelphia Child Guidance Clinic. Cloth. Price, $1. Pp. 72. New York: Commonwealth Fund Division of Publications, 1929.

How do lying, stealing, truancy from home and school, sex experiences, temper tantrums and such behavior deviations affect school achievement? Will not children who exhibit one or more of these behavior disorders do poorer work in the ordinary school subjects than school children in general? What is the physical condition of children presenting these behavior problems as compared with other children? These are some of the questions the authors of this monograph attempt to answer. The study consists of a comparison of the educational achievement of two group of problem children. The data for the study were taken from the case records of the demonstration child guidance clinics of Los Angeles and Philadelphia. These clinics were conducted by the National Committee for Mental Hygiene as part of the Commonwealth Fund program for the prevention of delinquency. The Los Angeles group consisted of 167 children and the Philadelphia group consisted of 163 children having intelligence quotients below 80. Preschool kindergarten, first grade pupils below the level of the tests, high school students and continuation school pupils above the test range were excluded. Behavior difficulties were found in about 85 per cent of the cases. In 800 Minneapolis children studied by Haggerty, the incidence of undesirable behavior was found to be 51 per cent. Each child received the usual clinical study, consisting of social history and medical, psychologic and psychiatric examinations. The psychologic examination included the usual intelligence, achievement, performance and vocational tests. The intelligence quotient ranged from 80, which was arbitrarily selected as the lower limit, to 154, with a mean of 102.6 in the Los Angeles group and 100.0 in the Philadelphia group. The average educational quotients (the educational age achieved on the test divided by the chronological age) was found to be 99.2 for the Los Angeles group and 98.1 for the Philadelphia group.

The comparison of the two groups was made by means of the accomplishment ratio. This is the educational quotient divided by the intelligence quotient. It is a measure of what the child is doing in school work as compared with what he is capable of doing with his intelligence. For example, if a child is bright, with an intelligence quotient of 120, he will be expected to do work of a higher grade than a child of the same chronological age with an intelligence quotient of 80. In the former case, if the child was doing all that might be expected, his educational quotient would be 120 and the accomplishment ratio ($^{120}/_{120}$) would equal 100. In the latter, if the child was doing all that might be expected of him his educational quotient would equal 80 and the accomplishment ratio would equal 100. On the other hand, if the child is doing poorer work in school than might be expected of him, the accomplishment ratio is below 100. It might be expected that children presenting such behavior and personality difficulties as truancy, lying, stealing, fighting, enuresis, sex difficulties, seclusiveness, day dreaming, functional nervous diseases and the like would be doing poorer work in school than the average child and thus present lower accomplishment ratios. The average (median) accomplishment ratio of the Los Angeles group was 95.5 and of the Philadelphia group 97.8. The average (median) accomplishment ratio

of 4,325 unselected school children from the school of Los Angeles was 95.4. From these and other results which they carefully worked out the authors conclude that "problem children show no general tendency to low educational achievement." They hasten, however, to state that "this does not mean that educational adjustment (in the narrow sense of scholastic accomplishment) is never affected by the child's difficulties in other than intellectual fields." Many individual cases show a definite cause and effect relationship between the child's problems and his school failures. The results of the study, however, show that there is no general trend in this direction.

The authors compare the physical conditions of the children presenting behavior problems with a superior group of children from Los Angeles County studied by Terman. "It appears that with a few exceptions the group of gifted children present physical defects in as great or greater frequency than the children with personality and behavior difficulties. Only cardiac conditions and anemia appear with much greater frequency in problem children than in the gifted." Those who are interested in the study of the behavior deviations of children and their relation to school progress will find this a valuable source of information.

RADIUM TREATMENT OF CANCER. By Stanford Cade, F.R.C.S., Assistant Surgeon, Joint Lecturer on Surgery and Teacher of Practical Surgery, Westminster Hospital. Cloth. Price, $5.50. Pp. 158, with 62 illustrations. New York: William Wood & Company, 1929.

The author reports the radium treatment of malignant tumors as practiced at the Westminster hospital, in London, and the guiding theoretical considerations. An introductory chapter furnishes information concerning the physical principles of radioactivity. The author proclaims as the underlying principle of modern radium therapy prolonged irradiation administered with small doses. The method of distance irradiation is reported to have given results which outweigh all the unfavorable economical considerations. The technic of the hospital as applied to tumors of the various organs is minutely described, with numerous drawings and colored plates. Although the author in his introductory remarks professes a rather sober attitude as to clinical claims, some of the therapeutic results reported, such as in cancer of the mamma and lungs, outdistance the accomplishments of most others. In the discussion of the therapeutic efficacy of radium treatment, only the local reaction is determined; the systemic reaction, now generally estimated as an important therapeutic factor, is not given any consideration. Remote organic injuries are not taken up. Notes on the protection of the operator handling the radium conclude the work.

DIE HORMONE; IHRE PHYSIOLOGIE UND PHARMAKOLOGIE. Band I: Keimdrüsen. Hypophyse. Nebennieren. Von Paul Trendelenburg, Professor an der Universität Berlin. Paper. Price, 28 marks. Pp. 351, with 60 illustrations. Berlin: Julius Springer, 1929.

This is a well written, comprehensive and critical review of the physiology, pharmacology and therapy of the hormones of the three important glands: hypophysis, gonads and suprarenals. The author promises to present the other endocrine glands in an early second volume. Every competent physician and biologic investigator who peruses the present book will await the second volume with eager expectation. Dr. Trendelenburg has succeeded remarkably well in reporting and evaluating both the established and the controversial data in a few terse and clear chapters. He seems to be familiar with most of the facts and theories as well as with the speculations in the field covered, though occasionally an important contribution seems to have escaped him, as (pp. 75-76) in the case of the effects of vasoligation the work of C. R. Moore, showing that this operation does not induce a cryptorchidism unless the testes are pushed up into the abdominal cavity, is not mentioned.

LA THÉRAPEUTIQUE PAR LES GLANDES (OPOTHÉRAPIE). Par le Docteur Louis Moinson. Préface du Docteur T. de Martel. Paper. Price, 8 francs. Pp. 191. Paris: Le François, 1928.

This is a rather popular summary of the main facts and theories of the pathology and therapy of the endocrine glands. Though neither exhaustive nor profound, it is in the main reliable. References are not made to the literature, and the book cannot be classed with the important contributions to this field of biology and medicine.

Miscellany

REPORT OF A MINOR OUTBREAK OF CEREBROSPINAL FEVER OCCURRING IN OJUELA, DURANGO, MEXICO

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The outbreak of cerebrospinal meningitis reported here appeared, March 13, 1929, when the first death occurred, and lasted until July 11, when the last case was noted. As there were several rather unusual features connected with the outbreak, it has seemed to me worth report.

There have been in all, thirty cases, in eight of which there was recovery and in twenty-two, death. This high death rate is explained largely by the fact that the people as a class have no fear whatever of the disease but do have a great fear of spinal puncture, and therefore did not report cases until late, or only after death had supervened.

Of the patients that died, none were seen until after more than twenty-four hours had elapsed, and usually much more. Ten of the patients were seen only after death, diagnosis being made by means of spinal puncture and the microscope.

In every case except one, the diagnosis was made at my first visit, and the injection of antimeningococcic serum was given intraspinally and at once, except when treatment was refused, the serum being given from three to eight times.

Eleven of the patients were given serum, and of these, six recovered and five died. Of those not given injections two recovered after a long convalescence—in each case more than two months. I could not say that treatment had any influence in these cases.

As to final end-results, one patient was totally blinded in the left eye and had very limited vision in the right eye as a result of an iridocyclitis. In this case an iridectomy was done by Dr. Wright of Torreon, and the vision was somewhat improved. This was the only case that showed any permanent ill effects of the disease. Temporary paralyses were present in several of the cases, as was temporary strabismus in four cases. Polyarthritis was present in varying degrees in a number of the cases.

Quite a number of the cases were in infants a few months of age; all of these died. None were given injections and none were seen before death. Some of these infants died without the parents ever being aware that they were ill, being found dead when the parents awoke in the morning. As many as four were seen by their parents at 11 o'clock at night in apparently good health, and were found cold in death at 5 o'clock in the morning. Two cases occurred in babies, aged 2 and 4 months, respectively, whose parents lived in caves of considerable size, about 400 yards down a steep mountain outside the town and about a hundred yards from any other habitations. The parents were pure Indians and seldom went out to work except in the mines. Neither of the babies had been out for, in one case, three weeks and in the other, two weeks. Both were taken ill at night and were dead in the early morning. In both cases the Weichselbaum bacillus was found in the spinal fluid.

The ages of those stricken ranged from 2 months to 48 years, and the disease was about as prevalent at one age as another up to 25 years of age.

Ojuela has a population of about 5,000 and is compactly built and greatly overcrowded. The cases were approximately evenly distributed throughout the town, except that there were fewer cases on the side of the dumping ground.

In no instance were there two cases in the same house or family, although owing to local conditions it was impossible to isolate those with the disease, and in all instances families of various numbers lived with those that were ill. Some of these families numbered fourteen.

Several of the patients showed profound meningococcemia or systemic infection. One, a child, aged 7 years, had a temperature ranging from 102 to 104.5 F. for forty-one days despite the fact that she had received eight intraspinal injections of serum. The temperature was still 104.5 in the last week of the illness when I decided to give an intravenous injection of serum. It caused an immediate reaction, with violent cardiac and abdominal pains, and finally convulsions. The next day the temperature was normal, and never again rose above normal. I had several less marked though notable effects from the intravenous use of the serum. I later read in THE JOURNAL of the use of the serum intravenously in meningococcemia.

As to the means employed for the control of the disease, I sprayed the nose and pharynx in all the miners that I could (which was about two thirds) with a 1:500 solution of acriflavine hydrochloride daily. We had stations at several points where the people were urged to go to be sprayed. Only a small percentage of the populace took advantage of this service. People coming in from the outside were sprayed at the station on the only road leading up to the town. Schools, theaters and other public places of amusement were closed, streets were cleaned, and garbage was burned.

Three brands of serum were used, one German, one American, and one made in Mexico. Deaths and recoveries resulted from each, and their efficiency seemed about on a parity.

In cases which showed a markedly purulent condition on spinal puncture, I withdrew all the spinal fluid possible, even up to 40 cc. before the injection of the serum, sometimes using a syringe, and washing out the spinal canal with serum before making the final injection.

All of our patients were treated under the worst possible conditions and without any nursing, among a population that had no interest whatever in the disease and no fear of it. I wore a mask over the nose and mouth when treating or visiting patients, and sprayed my nose and pharynx after each visit.

The disease did not attack any of the fifty or more foreigners who reside in Ojuela.

Petechial spots were seen in only a few instances, but after death there were large ecchymoses covering the major part of the body.

Medicolegal

Removal of Acutely Inflamed Tonsils

(Elam's Adm'r. v. Botkin (Ky.), 13 S. W. (2d) 507)

The appellant, as administrator, brought suit to recover damages because of his intestate's death after a tonsillectomy performed by the defendant. At the conclusion of the evidence for the plaintiff, the trial court peremptorily instructed the jury to find for the defendant. The plaintiff thereupon appealed to the court of appeals of Kentucky.

The tonsils of the appellant's intestate had been swollen and inflamed for several days before the defendant removed them. The defendant returned with his patient from the hospital to the patient's home. He visited him during the afternoon, and left instructions to be called if a hemorrhage occurred. The next morning the patient was much weaker, and an effort was made to find the defendant, but he had left the city. Other physicians and surgeons were called, at least four of whom examined the patient during the day. At the suggestion of one of them, he was removed to the hospital, where he died during the night. Four of the physicians who attended the patient testified that it is not safe to remove tonsils when they are inflamed, since hemorrhage or infection is more likely to occur under such circumstances. They all testified, however, that no hemorrhage occurred in the present case, that the operation was clean and that there was no evidence of any infection from the operation. None of them was able to state the cause of the patient's death. What purported to be a copy of the death certificate was proffered in evidence, but the physician who signed the death certificate could not identify the proffered document as a true copy, and the registrar of vital statistics testified that the original had been filed with the state board of health and that the document offered was not a true copy. The proffered document was therefore rejected, and neither the original nor a certified copy of the original was introduced in evidence. An effort was made by the plaintiff to show that the defendant was negligent in failing to remain where he would be available to treat his patient, or else to make provision for treatment during his absence. It did not appear in evidence, however, that death resulted from lack of attention or of proper treatment. There was no evidence tending to show that death resulted from negligence or unskilfulness on the part of the defendant in performing the operation. To submit the case to the jury under the stated facts shown in evidence would have been to permit the jury to speculate as to the cause of the decedent's death. The trial court properly sustained the defendant's motion for a directed verdict in his favor and the judgment of that court was affirmed.

Administrative Discretion in Revocation of Licenses

(Mandel v. Board of Regents of University of State of New York (N. Y.), 164 N. E. 895)

Mandel held a license to practice pharmacy as a "junior pharmacist." To obtain a license to practice as a "pharmacist," he sought to manufacture evidence of qualifications that he did not possess. After notice to him and due proof of the attempted fraud, the state board of pharmacy revoked the license that he already held as a junior pharmacist. On a writ of certiorari, the supreme court, appellate division, third department, confirmed the determination of the board. Mandel then appealed to the court of appeals of New York, which affirmed the order of the court below.

The legislature has provided that any license or certificate obtained by misrepresentation or fraud, or held by any one unfit or incompetent from negligence, habits or other cause, may be revoked after reasonable notice and opportunity to be heard. It has vested in an administrative board the power to determine, both before and after license has been granted, the fitness and competence of those who desire to practice. In the present case, the license of the petitioner as a "junior pharmacist" was revoked, not because that license was obtained by fraud but because the licentiate was "guilty of fraud in endeavoring to procure a pharmacist's license, and consequently was and is unfit to practice the profession of pharmacy under any form of license." In authorizing the revocation of licenses because of unfitness or incompetence, the legislature has not attempted to define what causes shall be deemed sufficient to produce such unfitness or incompetence, or the acts which shall be regarded as sufficient evidence of such unfitness or incompetence. It is the lack of fitness or competence which creates the danger, no matter how that lack may have arisen and no matter how it may be demonstrated. The legislature has declared that the licensing board shall look to the result of the unfitness or incompetence, rather than to the cause thereof, as the ground for revocation of a license. The appellant contended that this amounted to an attempt by the legislature to delegate to an administrative board the unrestricted power to define the offenses to which the penalty of the revocation of a license should attach, and that such action constituted an attempted delegation of a legislative function which could not lawfully be delegated. Unquestionably, said the court of appeals, the definition of offenses and the prescription of punishment for them is a legislative power. But, said the court, the power vested in the administrative board and exercised by it in this case has a different scope. Denial or revocation of a license because of guilt of an offense which tends to show moral or intellectual unfitness does not constitute punishment for the offense. It is only a measure of protection for the public. Decisions of the supreme court of the United States leave no doubt that the conferring of discretionary power on administrative boards to grant or withhold permission to carry on a trade or business which is the proper subject of regulation within the police power of the state is not violative of rights secured by the Fourteenth Amendment. The granting or revoking of a license must rest on reasonable grounds, but the fact that the

administrative officers charged with the performance of that function exercise discretion in performing it does not change the procedure from an administrative function into a legislative function. The board may not either define or punish offenses, but it may protect the public against demonstrated unfitness or incompetence arising from any cause, and the power so to do may be vested by the legislature in an administrative board or officer.

Mechanical Aids for Customers Selecting Spectacles

(Bruhl v. State (Texas), 13 S. W. (2d) 93)

The appellant was convicted of practicing optometry without a license and appealed to the court of criminal appeals of Texas. He was not a licensed optometrist, but he maintained a drug store and there he sold spectacles and eyeglasses. In his store he had a device to aid customers in determining for themselves the kind of eyeglasses or spectacles they needed. It consisted of two disks on a pedestal. Disk 1 was stationary and had in it two openings for the eyes. Disk 2 held twelve sets of lenses and could be rotated so that each pair of lenses would come in turn before the eyes of a person looking through disk 1. The spectacles and eyeglasses for sale were in trays and were lettered to correspond with the lenses in the revolving disk. A customer was at liberty to go to the tray where spectacles or eyeglasses were kept and by testing them make his selection, or he might use for that purpose the testing device described. The prosecution urged that the legislature, in article 737 of the Penal Code, forbade the practice of optometry by persons without licenses and certificates, and that in article 4565e, Revised Civil Statutes, "practicing optometry" is substantially defined to be, in one sense, any sale of spectacles or eyeglasses by a merchant, in any way or by any means other than by merely exhibiting them in trays or containers. The prosecution contended that any merchant who aided a customer in any way or provided for his use any mechanical device was practicing optometry. To this contention the appellant replied that article 4565e was unconstitutional and void, because it was contrary to the Fourteenth amendment to the federal constitution, which forbids any state from making and enforcing laws which abridge the privileges and immunities of citizens of the United States, and contrary to section 19, article 1, of the constitution of Texas, which forbids that any citizen be deprived of life, liberty or property except by due process of law.

The law in question, said the court, recognizes that spectacles and eyeglasses are articles of commerce and may be legitimately kept for sale and sold as merchandise by any person. Any one engaged in a legitimate business has the inherent right to do any and all things necessary or incident to the carrying on of that business, so long as he does not trespass on the rights of some other person nor do anything injurious to the morals, good order, comfort, convenience or health of the people. Beyond these restrictions, the so-called police power of the state may not go in its prohibitive or regulative effort. We have studied this record carefully, said the court, and perceive no possible differences in the results arrived at by the personal trying on of the spectacles in the trays and those obtained by the use of the machine, except that in the latter case (1) the remainder of the buying public would be protected from possible evil results incident to the indiscriminate handling of the contents of the trays by any and all sorts of persons who wish to buy glasses; (2) the merchant would be protected from loss and breakage of fragile merchandise by careless handling by a prospective purchaser; and (3) the purchaser would be saved time, and exposure to possible diseases incident to the examination and testing, by placing on and around his eyes, one at a time, of a large number of spectacles theretofore handled and used by other persons. The court was firmly convinced that the legislature tried to make a crime of acts which do not trespass on the rights of any other person and are not injurious to the morals, good order, comfort, convenience or health of the people. The court concluded that it was beyond the power of the legislature to forbid in such general and positive terms as it had used (1) any aid to the customer by the merchant; (2) the use of any device, however harmless on the one hand or helpful on the other; (3) the use of any literature or printed directions or suggestions; (4) any kind, character or means of assistance to any customer, no matter how feeble or infirm or desirous of such assistance the customer may be; and (5) any sale whatever, unless the customer approaches the tray or container of eyeglasses alone, and without interference or aid from any one, directly or indirectly, makes his own selection by trying on, one after another, the eyeglasses in the tray, until he concludes that he has those that suit him. Such restrictions make the law incapable of being upheld or enforced under the federal and state constitutions. The judgment of conviction of the court below was therefore reversed and the prosecution ordered dismissed. After argument in support of a motion for a rehearing, the motion was denied.

Factors Determining Reasonableness of Fees

(Gelpi v. Wilbert (La.), 119 So. 455)

At the request of the defendant, the plaintiff, a surgeon, traveled about 80 miles and operated on him. The defendant refused to pay a fee of $500, and the plaintiff then obtained two judgments against him for $250 each, in the district court, parish of Iberville. The defendant then appealed to the court of appeals of Louisiana, first circuit. Several physicians testified that the plaintiff's charges, in view of his well known skill and reputation as a surgeon, were reasonable. The defendant claimed that he had been led by other physicians to believe that the charges for the plaintiff's services would be not more than $350, but he made no effort to agree with the surgeon as to such charges.

"In determining the amount which constitutes fair remuneration for medical services," said the appellate court, "many factors must be taken into consideration, some of which are the skill and reputation of the physician, the time which he devotes to the case, and the inconvenience and expense to which he may be subjected. Another important fact to be considered is the amount of the estate and the ability of the patient to pay." The defendant was married and in receipt of a salary of $175 a month. He had no other source of income. He owned no property of any kind, except an automobile which he bought on instalments when he resided with his father, who did not charge him for board and lodging. He produced evidence to show that he was insolvent. Considering all of the circumstances, the court concluded that a fee of $350 would be fair to both parties and ordered that the judgment appealed from be reduced.

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Atlantic City, N. J., October 21-25. Dr. William P. Wherry, Medical Arts Building, Omaha, Executive Secretary.

American Association of Railway Surgeons, Chicago, November 6-8. Dr. Louis J. Mitchell, 29 East Madison Street, Chicago, Secretary.

American Child Health Association, Minneapolis, September 30-October 4. Dr. Philip Van Ingen, 125 East 71st Street, New York, Secretary.

American College of Physical Therapy, Chicago, November 4-7. Dr. F. L. Wahrer, 22 South Center Street, Marshalltown, Iowa, Secretary.

American College of Surgeons, Chicago, October 14-18. Dr. F. H. Martin, 40 East Erie Street, Chicago, Director-General.

American Public Health Association, Minneapolis, September 30-October 4. Mr. Homer N. Calver, 370 Seventh Avenue, New York, Executive Sec'y.

American Society of Tropical Medicine, Miami, Fla., November 20-22. Dr. Edwin Peterson, U. S. Naval Hospital, Washington, D. C., Sec'y.

Associated Anesthetists of the United States and Canada, Chicago, October 14-18. Dr. F. H. McMechan, 770 West Lake Road, Avon Lake, Ohio, Secretary.

Association of American Medical Colleges, New York, Nov. 7-9. Dr. Fred C. Zapffe, 25 East Washington Street, Chicago, Secretary.

Delaware, Medical Society of, Farnhurst, October 8-10. Dr. James E. Brayshaw, Medical Arts Building, Wilmington, Secretary.

Interstate Postgraduate Medical Association of North America, Detroit, October 21-25. Dr. Edwin Henes, Jr., 445 Milwaukee Street, Milwaukee, Executive Secretary.

Kentucky State Medical Association, Louisville, October 21-24. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

Pennsylvania, Medical Society of the State of, Erie, September 30-October 3. Dr. Walter F. Donaldson, 500 Penn Avenue, Pittsburgh, Secretary.

Southern Medical Association, Miami, Fla., November 20-22. Mr. C. P. Loranz, Empire Building, Birmingham, Ala., Secretary.

Vermont State Medical Society, Bellows Falls, October 10-11. Dr. William G. Ricker, 29 Main Street, St. Johnsbury, Secretary.

Virginia, Medical Society of, Charlottesville, October 22-24. Miss Agnes V. Edwards, 104½ West Grace Street, Richmond, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Dis. of Children, Chicago

38: 227-450 (Aug.) 1929

*Pathology of So-Called Acute Pyelitis in Infants. J. R. Wilson and O. M. Schloss, New York.—p. 227.
*Solitary Nonparasitic Cysts of Liver. A. V. Stoesser and O. H. Wangensteen, Minneapolis.—p. 241.
*Successive Roentgenograms of Chest of Children During Measles. J. L. Kohn and H. Koiransky, New York.—p. 258.
*Polymorphonuclear Count in New-Born. H. N. Sanford, Chicago.—p. 271.
*Management of Ambulatory Diabetic Child. W. S. Collens and H. G. Grayzel, New York.—p. 275.
*Cardiospasm in Infancy and Childhood. H. J. Moersch, Rochester, Minn.—p. 294.
Basal Metabolism in Children of Abnormal Body Weight: II. In Underweight Children. A. Topper and H. Mulier, New York.—p. 299.
*Organisms Associated with Commercially Prepared Infant Foods. G. J. Hucker and A. M. Hucker, Geneva, N. Y.—p. 310.
*Acidosis of Acute Diarrhea in Infancy. B. Hamilton, L. Kajdi and D. Meeker, Baltimore.—p. 314.
*Treatment of Juvenile Diabetes. A. E. Fischer, New York.—p. 323.
Chronic Tetany and Chronic Mycelial Stomatitis in Child Aged Four and One-Half Years. E. S. Thorpe, Jr., Philadelphia, and H. E. Handley, Murfreesboro, Tenn.—p. 328.
Fluorescent Properties of Ringworm of Scalp as Aid in Diagnosis. H. H. Ray, San Francisco.—p. 339.
*Antidiuretic Effect of Solution of Pituitary Dropped Intranasally in Diabetes Insipidus: Case. H. B. Mettel, Indianapolis.—p. 342.
Bone Dystrophy. M. Ivimey, New York.—p. 348.
Diaphragmatic Hernia in Infancy and Childhood. H. M. Greenwald and M. Steiner, New York.—p. 361.
Thomas Sydenham, 1624-1689. J. Ruhräh, Baltimore.—p. 393.

Pathology of So-Called Acute Pyelitis in Infants.—Cases are cited by Wilson and Schloss which are representative of the lesions found at postmortem examination of forty-nine infants and young children whose urine contained pus during life. They have in no instance afforded justification for the diagnosis of pyelitis. It is not their opinion that pyuria in infants is always due to suppurative interstitial nephritis. On the contrary, there are a number of other conditions to which it may be due, but these are relatively rare. Congenital anomalies of the urinary tract, especially those leading to dilatation of the ureters and pelves of the kidneys, are often associated with chronic inflammation of the mucous membrane of these structures. Cystitis occasionally occurs in infants. Renal calculi, while rare, may provoke pyelitis in early life. It is their belief, however, that the most common cause of severe acute pyuria in young infants, especially the type of case usually designated pyelitis, is an acute inflammatory process of the interstitial tissue of the kidney. In view of their observations it seems evident why the usual medical methods of treating so-called acute pyelitis have been of such little value. When a severe suppurative process affects only one kidney, the question of its removal must give rise to serious consideration.

Solitary Nonparasitic Cysts of Liver.—Two cases in which the patients were successfully operated on for solitary nonparasitic cysts of the liver are reported by Stoesser and Wangensteen. Solitary nonparasitic cysts of the liver are allied to cystic disease, but the nature of their origin remains obscure. These cysts occur with predilection in the female and rarely give rise to symptoms other than those of pressure. Only once has the correct preoperative diagnosis been made. The attachment to the liver of large abdominal cysts may be recognized in that such swellings in the right lobe of the liver push the ascending colon, hepatic flexure and transverse colon downward and to the left. The treatment of election, when the nature of the attachment of the cyst to the liver permits, is removal, but excision of a part of the wall of the cyst, marsupialization and drainage is a satisfactory mode of treatment with which the surgeon has more often to content himself.

Successive Roentgenograms of Chest of Children During Measles.—Successive roentgenograms of the chest were taken by Kohn and Koiransky of 130 children between the ages of 7 months and 12 years in the various stages of measles. Pneumonic infiltrations were present in 62.4 per cent of the patients less than 4 years of age and in 42.2 per cent of the patients 4 years of age and over. In the cases showing pulmonary infiltration, the infiltration was present in at least 61 per cent before or during the height of the eruption. The pulmonary infiltrations were of three types. The infiltration was most dense, in the majority of cases, during the receding eruptive or posteruptive stage. Shadows suggesting pulmonary infiltration first appeared and continued to progress in twenty-seven cases, even after the temperature of the child was normal. In none of these cases were there any definite physical pulmonary signs. In the group in which no pneumonic infiltrations were observed, 79.2 per cent of the patients were considered as having had a clinically mild course of measles. Of the cases in which pulmonary infiltrations appeared in the roentgenograms, 44.4 per cent were considered clinically mild. Physical signs giving evidence of bronchial or pulmonary involvement were present in 14 per cent of the group that showed no pulmonary infiltration on the roentgenogram and in 47 per cent of the pneumonic group. One could not predict from the physical examination during the eruptive stage the probability of finding a pneumonic infiltration in the roentgenogram. These pneumonic shadows persisted for from two to four weeks after their appearance in five cases observed. Abnormal intensity of the pulmonary markings was present in 80 per cent of all cases.

Polymorphonuclear Count in New-Born.—The polymorphonuclear leukocytes of the sixty new-born babies reported on by Sanford showed a preponderance of the single and double lobed nucleated forms. Only a few of the trilobed polymorphonuclear cells were present and none of the other multilobed forms appear until the ninth day. There is a rapid tendency toward the adult mean.

Management of Ambulatory Diabetic Child.—The management of the ambulatory diabetic child is described by Collens and Grayzel. Tables are incorporated which facilitate the derivation of the diabetic formula and menu. A new method of expressing the sugar tolerance of a diabetic patient in terms of the dextrose-insulin quotient is described. The height and growth rates of diabetic children are reported.

Cardiospasm in Infancy and Childhood.—Moersch asserts that cardiospasm in childhood is of relatively greater frequency than it is generally supposed to be. The hydrostatic dilator offers the most satisfactory and safest method of treatment.

Organisms Associated with Commercially Prepared Infant Foods.—Examination made by the Huckers of a representative series of samples of prepared infant foods revealed practically no hemolytic streptococci. It is suggested, however, that until more information is available a medium containing blood, used as a routine control, might alleviate further suspicion and possibly bring to light any occasional infection of the infant food either during the manufacturing process or in the raw products.

Acidosis of Acute Diarrhea in Infancy.—In a series of twenty-five cases of acute intoxication analyzed by Hamilton et al., severe acidosis was found in eleven. The most common change in the blood was a decrease in the concentration of fixed base, which occurred in fourteen cases. The acidosis, when present, was a chloride acidosis. There were two types: one with low base, chloride not being decreased in proportion to the base; and one with high base, chloride being increased even more than the base. The cause of the acidosis is probably loss, in the stools, of base not bound as chloride and not compensated for by loss of hydrochloric acid through vomiting.

Treatment of Juvenile Diabetes.—While restrictions of diet and substitution therapy in the form of insulin are cumbersome, Fischer feels that they constitute the only means by which diabetic children can be brought to adult life. There are different standards for calculation of the diet in different clinics. More statistics will have to be collected in order to determine

the optimum method, but the results in most clinics are generally satisfactory. There is, however, sufficient evidence to justify a more liberal carbohydrate diet than has heretofore been advocated.

Antidiuretic Effect of Pituitary Dropped Intranasally in Diabetes Insipidus.—A case of diabetes insipidus with response to the nasal administration of solution of pituitary has been studied by Mettel. The intranasal application of solution of pituitary from the posterior lobe given by nasal drops seems as efficacious as other methods heretofore described.

American J. Roentgenol. & Rad. Therapy, New York

22: 107-206 (Aug.) 1929

Roentgen Diagnosis of Lesions of Small Intestine. H. W. Soper, St. Louis.—p. 107.
*Bronchiectasis. A. Hartung, Chicago.—p. 120.
*Epiphysitis of Adolescents: Etiology. L. A. Smith, Indianapolis.—p. 127.
*Radiotherapy for Tumors of Testis. A. U. Desjardins, F. H. Squire and S. A. Morton, Rochester, Minn.—p. 137.
Two Simple Methods of Purifying Radium Emanation. W. G. Moran, Halifax, Canada.—p. 147.
Quantitative Characteristics of Light Sources Used in Ultraviolet Therapy. H. Goodman, New York.—p. 150.
Angiosarcoma and Myeloma. R. S. Stone, San Francisco.—p. 153.
Congenital Cystic Lung: Case. D. N. Gibson, Madison, Wis.—p. 155.
Fracture of Lumbar Transverse Process: Case. F. E. Diemer, Denver. —p. 157.
Burn from High Voltage Current: Case. A. T. Nisbet, Brisbane, Australia.—p. 158.

Bronchiectasis.—Hartung asserts that diagnostic bronchography with iodized oil is absolutely essential for obtaining accurate information relative to the nature, location and extent of bronchiectatic dilatations.

Epiphysitis of Adolescents.—Smith reports nine cases of lesions of various epiphyses presented with such association with infection as to indicate that infection is a probable cause of many of this type.

Radiotherapy for Tumors of Testis.—Desjardins et al. are convinced that radiotherapy is a valuable method of treating inoperable cases or cases in which metastasis has occurred in spite of operation, and that the most common tumor of the testis, the embryonal carcinoma, is peculiarly and characteristically vulnerable to irradiation, thus providing a means of differentiating such tumors from other new growths affecting the testis.

Archives of Ophthalmology, Chicago

2: 123-236 (Aug.) 1929

Operative Treatment for Cases of Meningocele (or Encephalocele) into Orbit. W. E. Dandy, Baltimore.—p. 123.
Primary Squamous Cell Carcinoma of Cornea: Case. J. H. Judd, Beatrice, Neb.—p. 133.
Optical Replica of Human Eye for Study of Retinal Image. G. H. Gliddon, Hanover, N. H.—p. 138.
Stenosis of Lacrimal Ducts. F. W. Dean, Council Bluffs, Iowa.—p. 164.
Sympathetic Ophthalmia: Case Occurring Forty-Eight Years After Injury. J. W. Smith, New York.—p. 169.
Management of Simple Glaucoma. W. R. Parker, Detroit.—p. 174.
Disturbances of Visual Functions in Concomitant Convergent Squint. W. F. Moncreiff, Chicago.—p. 179.
Systemic Use of Hypertonic Solutions in Glaucoma. R. K. Lambert and J. Wolff, New York.—p. 198.

Archives of Otolaryngology, Chicago

10: 113-216 (Aug.) 1929

Traumatic Conditions of Ear in Workers in Atmosphere of Compressed Air. H. H. Vail, Cincinnati.—p. 113.
Pathologic Changes in Tonsils. H. F. Wilkinson, Rochester, Minn.— p. 127.
Relationship of Sinusitis and Bronchiectasis. L. H. Quinn and O. O. Meyer, Madison, Wis.—p. 152.
Radium Therapy in Atrophic Rhinitis with Offensive Odor (Ozena). L. Hubert and G. A. Robinson, New York.—p. 166.
Acute Infectious Mononucleosis. W. O. LaMotte, Wilmington, Del.— p. 171.
Calculus of Submaxillary Gland and Duct. F. E. Hamlin, Roanoke, Va. —p. 177.
Pemphigus Primary in Larynx. A. B. Murphy, Everett, Wash.—p. 188.
Phenylamino-Ethanol Sulphate in Rhinology. P. T. Pace and J. A. Bacher, San Francisco.—p. 189.
Rhinolith: Case. J. Ireland, Chicago.—p. 190.
Mastoidectomy Suction Tips. D. H. Anthony, Memphis, Tenn.—p. 192.
Sharp Guarded Forceps for Evacuating Peritonsillar Abscesses. S. J. Pearlman and N. Leshin, Chicago.—p. 192.
Simple Instruments for Direct Intubation and Extubation. E. Boyd, Toronto, Canada.—p. 193.

Archives of Pathology, Chicago

8: 171-370 (Aug.) 1929

Mucoid Degeneration of Oligodendroglia and Formation of Free Mucin in Brain. R. R. Grinker and E. Stevens, Chicago.—p. 171.
*Prenatal Volvulus of Small and Large Intestine Caused by Mesenteric Cyst. A. M. Sala and I. Nachamie, New York.—p. 180.
Irregularity in Estrual Cycle of White Rat Following Operation on Ovaries. D. G. Drips, Rochester, Minn.—p. 187.
*Spontaneous Rupture of Aorta. R. A. Lifvendahl, Chicago.—p. 200.
*Structural Changes of Liver in Pernicious Anemia. S. R. Mettier, Boston.—p. 213.
*Histologic Changes in Spleen in Early Congenital Syphilis. C. J. Watson, Minot, N. D.—p. 224.
*Effect of Aluminum on Mammalian Blood and Tissues. F. B. Seibert and H. G. Wells, Chicago.—p. 230.
Leukocyte Content of Regional Lymphatics in Inflammation. V. Menkin and J. Freund, Philadelphia.—p. 263.
Improved Rack for Sterilizing Vaccines. C. J. Bucher, Philadelphia. —p. 267.
Cell-Plasma Ratio. J. Felsen, New York.—p. 269.
Recent Work on Effects of Inanition and Malnutrition on Growth and Structure. C. M. Jackson, Minneapolis.—p. 273. (C'td. from page 1078.)

Prenatal Volvulus of Small and Large Intestine Caused by Mesenteric Cyst.—Sala and Nachamie report a case of prenatal volvulus of the small and the large intestine in a full-term female colored child with an undescended large intestine which was caused by a mesenteric cyst. The cyst was microscopically enterogenous and contiguous with the overlying intestine. It had a mucosa, an inner circular layer and an outer longitudinal layer of smooth muscle and a serosa. The inner circular layer of the cyst split to encircle the adjacent intestine at the junction of the cyst and the intestine, and the outer longitudinal layer was common to the two. The cyst caused the volvulus before the fourth month of intra-uterine life, as shown by the presence of an undescended cecum in the volvulus. As a result of the histologic observations, the authors believe that in these cases separation of the cyst from the intestine should not be attempted, but a resection should be undertaken at once.

Spontaneous Rupture of Aorta.—Lifvendahl reports spontaneous rupture of the aorta in three instances 1½ fingerbreadths above the aortic cusps, and in one of these there were two tears of the vessel below the level of the diaphragm. The gross changes at the site of such a rupture are frequently inadequate to explain the tears, but localized microscopic alterations of a syphilitic and degenerative nature are marked. Medicolegally, microscopic examination at the site of the rupture is important. A combination of contributing factors must be taken into consideration, which include the local destructive process and the conditions that increase the blood pressure. The latter may be on an arteriosclerotic, nephritic, functional or therapeutic basis.

Structural Changes of Liver in Pernicious Anemia.—A contrast study was made by Mettier of the histology of the livers from twenty patients with pernicious anemia not treated with liver who died during relapse, and from five patients treated with liver who died from intercurrent disease while the anemia was in partial or complete remission. The livers from the twenty patients who died during relapse showed the following: 1. Pronounced general hypertrophy of the Kupffer cells was noted. 2. Desquamation of Kupffer's cells and phagocytosis of red blood cells were obvious, but were not more excessive than in other severe types of anemia or in infectious diseases. 3. Siderosis was marked in the liver cells and moderate in the Kupffer cells. 4. There was fatty degeneration in seven of the cases; necrosis and periportal infiltration with lymphocytes and plasma cells were present in four of these cases and also in three other cases. The livers from the five patients who died in remission showed the following: 1. The Kupffer cells were of normal size, except for a relative few, which contained pigment. There was indirect evidence that this return to normal occurred within the first ten days of remission. 2. The desquamation of Kupffer's cells and the phagocytosis of red blood cells were equivalent in degree to that found during relapse. 3. Siderosis equivalent in degree to that present during a relapse was noted in cases of early remission. In the two patients whose blood appeared normal at death a slight degree of siderosis was present. In contrast to Piney's observations, blood formation in the liver was not found in any of the

twenty-five patients. Megaloblasts occurred free in the sinusoids of the liver in the patients who died during a relapse.

Histologic Changes in Spleen in Early Congenital Syphilis.—Watson asserts that extensive destruction of the blood may occur in the spleen in congenital syphilis, and is probably an important factor in the production of anemia. Marked erythrophagocytosis and hemosiderosis is observed as evidence of this destruction. The macrophages are largely of sinus endothelial origin, and fixed sinus endothelial cells are also phagocytic.

Effect of Aluminum on Mammalian Blood and Tissues.—Daily intravenous injections made by Seibert and Wells into rabbits of from 0.011 to 0.017 Gm. of sodium aluminum sulphate per kilogram in 0.8 per cent concentration, or of from 0.003 to 0.004 Gm. of aluminum chloride per kilogram in 0.2 per cent concentration, caused a definite secondary anemia; i. e., a decrease in the percentage of hemoglobin and in the number of erythrocytes, an increase in the number of leukocytes, chiefly the mononuclears, and an increased resistance of the corpuscles to hemolysis by hypotonic salt or saponin. The final blood picture showed normoblasts, poikilocytes, anisocytes, chromatophilic cells and stipple cells. Moreover, at the site of the injection, local irritant effects appeared, such as swelling, edema, inflammation and necrosis of the tissue and swelling of neighboring lymph nodes. Daily intravenous injections of a sulphuric acid solution, the p_H of which was the same as that of the aluminum solution (3.4), produced no similar effects. An acid solution of an acidity equivalent to the maximal acidity that could be, but probably would not be, released from the sodium aluminum sulphate solution at any one time (p_H 2.6) produced a decrease in the number of erythrocytes, and in one rabbit caused marked local irritation at the site of the injection. But a comparison of the results obtained with the aluminum solutions and the corresponding acid solutions make it probable that the changes so marked in the rabbits treated with the former were due chiefly to the aluminum ion. The feeding of small daily doses over extended periods and the feeding of large doses of aluminum compounds produced changes in the blood and the tissues which indicate that aluminum is absorbed through the intestinal tract and then exerts the same toxic effects as follow intravenous injection.

Archives of Physical Therapy, X-Ray, Radium, Omaha

10: 335-384 (Aug.) 1929

Effect of Zinc Ionization on Chronic Ulcers. L. Gries, Chicago.—p. 335.
Treatment of Gynecologic Conditions with Low-Voltage Currents. F. H. Walke, Shreveport, La.—p. 342.
Physical Therapeutics in Peripheral Neuromuscular Affections. E. L. Libbert, Lawrenceburg, Ind.—p. 349.
Colonic Therapy. C. L. Rowell, Chicago.—p. 354.
Use of Heat and Cold in Treatment of Pyogenic Infections. A. C. Selmon, Battle Creek, Mich.—p. 361.
Mercury Vapor Quartz Light Therapy in Pediatrics. H. H. Perlman, Philadelphia.—p. 365.

Archives of Surgery, Chicago

19: 375-566 (Sept.) 1929

*Traumatic Subclavian Arteriovenous Aneurysm. E. L. Gilcreest, San Francisco.—p. 375.
Celiac Plexus and Branches. F. Kiss, Budapest, Hungary, and H. C. Ballon, St. Louis.—p. 399.
Branchial Apparatus. O. R. Hyndman and G. Light, Iowa City.—p. 410.
Lymphatic Drainage from Peritoneal Cavity in Dog. G. M. Higgins and A. S. Graham, Rochester, Minn.—p. 453.
*Old Nodular Goiter Surrounding Trachea, Posterior to Carotid with Isthmus Posterior to Esophagus. M. F. Porter, Fort Wayne, Ind.—p. 466.
*Effect of Intrabronchial Injections of Iodized Poppy Seed Oil 40 Per Cent. R. B. Bettman, J. Kelly and N. Crohn, Chicago.—p. 471.
Intestinal Obstruction. F. Raine and M. C. Perry, Milwaukee.—p. 478.
*Comparative Study of Bactericidal Values of Twenty-One Commonly Used Antiseptics. A. W. Allen, New York.—p. 512.
Surgical Diseases of Colon. F. W. Rankin and J. A. Bargen, Rochester, Minn.—p. 518.
Review of Abdominal Surgery. G. W. Nagel, San Francisco, E. S. Judd, Rochester, Minn., B. R. Parker, Chicago, W. H. Bueermann, Portland, Ore., and H. Peiper, Frankfort-on-the Main, Germany.—p. 526.

Traumatic Subclavian Arteriovenous Aneurysm.—A case of traumatic subclavian arteriovenous aneurysm of eight years' duration reported by Gilcreest showed: (1) enormous swelling of the right side of the chest, the right portion of the shoulder girdle and the entire right arm and hand, with great distention of veins in these parts; (2) cardiac dilatation and hypertrophy resulting from increased volume flow through the heart incident to the production of the fistula; (3) Branham's bradycardiac reaction and associated variations in blood pressure due to an increase in blood volume caused by the fistula; (4) characteristic bruit and thrill transmitted centrifugally; (5) increase of oxygen content in veins distal to the lesion; (6) dilatation of the proximal artery, diminution of the distal artery and great dilatation and thickening of the distal vein. Proximal ligations of artery and veins improved the condition but did not effect a cure. Subsequent distal ligations, ten months later, completing the quadruple ligation, effected a cure.

Old Nodular Goiter Surrounding Trachea.—Porter reports a case of sudden death from asphyxia due to an acute streptococcic abscess engrafted on a chronic inflammation in an old nodular, nonmalignant goiter, which completely surrounded the trachea and esophagus with the isthmus behind and the lateral lobes meeting in front of the trachea, and having the carotid vessels stretched over the front of the right lobe.

Effect of Intrabronchial Injections of Iodized Poppy Seed Oil 40 Per Cent.—Experiments made by Bettman et al. disclosed that instillation of iodized poppy seed oil 40 per cent into the bronchial tree of dogs is not followed by pneumonia nor, as far as they could see, by any acute cellular reaction. Most of the iodized oil is speedily expelled by coughing. Small amounts of the oil are retained for at least seven months. The presence of this iodized oil apparently does not cause a definite foreign body reaction.

Comparative Study of Bactericidal Values of Twenty-One Commonly Used Antiseptics.—The bactericidal efficacy of each of twenty-one commonly used antiseptics was tested by Allen against four different organisms. The halogen group was the most efficacious of the antiseptic groups. The phenol coefficient value stated as an index of practical bactericidal efficacy is said to be unsatisfactory. The present methods of judging antiseptics do not constitute an accurate index of their practical worth.

Arkansas M. Soc. Journal, Little Rock

26: 57-72 (Aug.) 1929

Diseases of Kidney. J. C. Beard, Pine Bluff.—p. 57.
Medical Economics. P. Hunt, Texarkana.—p. 61.
Surgical Treatment of Bronchiectasis. J. K. Smith, Texarkana.—p. 63.

Canadian M. Assn. Journal, Montreal

21: 129-256 (Aug.) 1929

Sudden Onset of Lung Tuberculosis in Adult and Lobar Localization. E. Rist, Paris, France.—p. 143.
Use of Vitamins A and D and Sodium Iodide in Preoperative Treatment of Exophthalmic Goiter. R. H. Fraser and A. T. Cameron, Winnipeg.—p. 153.
*Effects of Iodine Treatment, With and Without Vitamins, On Basal Metabolic Rate in Exophthalmic Goiter. I. M. Rabinowitch, Montreal.—p. 156.
Digestive Pathology: II. Mechanism of Fermentation and Putrefaction in Intestines. J. M. Rosell, Barcelona, Spain.—p. 161.
*Sickness Insurance. J. W. S. McCullough, Toronto.—p. 168.
New Anesthetic Gas: Cyclopropane. G. H. W. Lucas and V. E. Henderson, Toronto.—p. 173.
Acute Gastro-Intestinal Disorders of Infancy. S. G. Ross, Montreal.—p. 176.
Light Therapy. W. A. Jones, Kingston.—p. 180.
Possibility of Relieving Abdominal Pain by Section of Sympathetic Rami Communicantes. F. A. C. Scrimger, Montreal.—p. 184.
Radiologic Examination of Heart and Great Vessels. D. Wheeler, Winnipeg.—p. 189.
Differentiation of Plasma Cells from Mast Cells in Intestinal Mucosa of White Rat. E. N. Ballantyne, London, Ont.—p. 195.
Teratoma of Neck. H. Spohn, Vancouver.—p. 200.
Chorion-Epithelioma in Male: Case. D. Prendergast, Toronto.—p. 203.
Parkinsonian Rigidity Treated with Stramonium. R. Robertson, Wellington, Ont.—p. 204.
Amyotonia Congenita: Case. R. R. MacGregor, Kingston.—p. 204.

Iodine Treatment in Exophthalmic Goiter.—Rabinowitch administered a mixture of vitamins A and D in high concentrations in combination with an iodo-fatty acid to patients with exophthalmic goiter. Experience suggested that it not only was as effective as compound solution of iodine but was superior to it. Then Rabinowitch prepared a mixture, in capsule form, with much greater concentrations of vitamins. Each dose given corresponded to vitamin A, 1,250 units; vitamin D,

250 units; iodine, 30 mg. Twelve patients suffering from exophthalmic goiter were selected at random. In each case the mixture was given twice daily. Basal metabolic rates were determined at regular intervals of four days during the periods of observation. The latter was used as an index of progress. In order to compare the effects of this mixture with those of compound solution of iodine, twelve patients who were treated with this solution were selected at random. The average decrease of the basal metabolic rate was 3.2 per cent daily with compound solution of iodine and 4.7 per cent with the mixture of iodized fatty acid and vitamins. Much less iodine was given with the vitamin-containing mixture than when compound solution of iodine was used.

Sickness Insurance. — McCullough concludes that a state system of health or sickness insurance including an improved public health service is desirable. Such a service would afford: a sense of security in time of sickness on the part of the entire insured population; medical attention to those not now in a position to obtain such attention; early recognition and treatment of minor ailments and the possible prevention of incurable conditions; a clinical record of a large portion of the population; a feeling of greater financial security among physicians who serve the industrial population; a certain assured income; participation in and remuneration for certain public health services; the spread of health education among the people, and early discovery of children's defects through medical inspection of schools.

Delaware State M. Journal, Wilmington

1: 129-148 (Aug.) 1929

Uremia. R. Murray, Lewes.—p. 129.
Treatment of Bronchial Asthma and Hay-Fever. H. B. Wilmer, Philadelphia.—p. 132.

Florida M. Assn. Journal, Jacksonville

16: 59-94 (Aug.) 1929

Local Anesthesia in Reduction of Closed Fractures and Dislocations. E. H. McRae, Tampa.—p. 59.
Venomous Snakes of North America and Treatment of Their Bites. F. T. Barker, Tampa.—p. 63.
Fractures of Pelvis: Treatment by Murphy Sling. T. B. Bates, Lake City.—p. 68.
Tularemia. G. C. Tillman, Gainesville.—p. 71.
Medical Ethics. H. L. Putnam, St. Petersburg.—p. 73.
Intracapsular Method of Cataract Extraction: Cases. W. B. Hopkins and W. Patterson, Tampa.—p. 75.
Conservative Treatment of Gonorrhea. J. F. Cranford, St. Petersburg.—p. 77.

Georgia M. Assn. Journal, Atlanta

18: 341-392 (Aug.) 1929

Gallbladder Disease. A. R. Rozar, Macon.—p. 341.
Mycosis Fungoides. G. Y. Massenburg, Macon.—p. 345.
Pernicious Anemia. T. E. Rogers, Macon.—p. 348.
Heart Septal Defect. W. C. Pumpelly, Macon.—p. 349.
Heart Case. J. A. Fountain, Macon.—p. 351.
Scleroderma: Two Cases. C. C. Harrold, Macon.—p. 354.
Postoperative Pulmonary Atelectasis. C. H. Richardson, Macon.—p. 355.
Spinal Anesthesia: Use of Spinocain in 100 Cases. G. W. Fuller, Atlanta.—p. 358.
Spinal Anesthesia in Obstetrics. L. H. Wright, Augusta.—p. 362.
Allergic Reaction in Children: Digestive Disorders. L. Bivings, Atlanta.—p. 369.
Nevi. J. W. Jones and H. S. Alden, Atlanta.—p. 372.
Enlargement of Cervical Lymph Nodes. D. C. Elkin, Atlanta.—p. 374.
Management of Convergent Strabismus. W. O. Martin, Jr., Atlanta.—p. 378.
Yeast and Pellagra. N. P. Walker, Milledgeville.—p. 379.
Plea for Further Cooperation and Support. J. Van de Vrede, Atlanta.—p. 380.

Journal of Cancer Research, Lancaster, Pa.

13: 103-205 (July) 1929

Transplantation Studies on Tumors Arising Spontaneously in Heterozygous Individuals. L. C. Strong, Ann Arbor, Mich.—p. 103.
Papillary Cystadenoma Lymphomatosum. A. S. Warthin, Ann Arbor, Mich.—p. 116.
*Occurrence of Cancer and Tuberculosis in 11,195 Postmortem Examinations. H. A. Carlson and E. T. Bell, Minneapolis.—p. 126.
Regression in Transplanted Tumors in Mice Freed of Worms. M. C. Marsh, Buffalo, N. Y.—p. 136.
*Mechanism of Cancer Death and Relation of Pernicious Anemia to Cancer. J. Blair.—p. 142.
Radiochemical Reactions. M. C. Reinhard, Buffalo, N. Y.—p. 165.
*Blood Cholesterol Studies in Cancer: IV. Other Lipoid Partitions. W. L. Mattick and K. W. Buchwald.—p. 157.
Malignant Cell. W. C. MacCarty.—p. 167.
Factors Influencing Precipitation of Colloidal Lead. H. Q. Woodard, New York.—p. 173.
Influence of Ingestion of Various Animal Tissues on Growth of Carcinoma and Sarcoma in Rats. K. Sugiura and S. R. Benedict, New York.—p. 180.

Occurrence of Cancer and Tuberculosis.—Carlson and Bell conclude from their study that active tuberculosis is much less frequent in cancerous than in noncancerous subjects; and cancer is much less common in those with active tuberculosis than in those with no tuberculosis or with healed tuberculosis. But active tuberculosis is even less frequently associated with heart disease than with cancer; and cancer shows less association with heart disease than with active tuberculosis. These results do not mean that active tuberculosis inhibits the development of both cancer and heart disease. They are due to the fact that the majority of persons with active tuberculosis have no other major illness and therefore the control (noncancerous, noncardiac disease) must always have a higher percentage of tuberculosis. The authors did not find any statistical evidence to support the view that there is an antagonism between cancer and tuberculosis. The only proper control for the association of active tuberculosis and cancer is the incidence of active tuberculosis in some other disease.

Cancer Death and Relation of Pernicious Anemia to Cancer.—A connection between anemia and pyelitis was noted by Blair and case reports of cancer cases seen in general practice are presented. The similarity of many of the general symptoms of cancer and pyelitis is noted and an explanation offered for these similarities and for the manner and mechanism of the production of cancer cachexia and death. It would appear, then, that there is a relation existing between pyelitis, pernicious anemia and cancer by reason of an apparent common origin and by reason of their possible coaction in the same individual. It seems evident that the usual mechanism of death in cancer, not due to starvation or hemorrhage or pressure on vital organs, is by the toxemia and drain of urinary tract infection. As it appears evident that infection of the urinary tract is commonly present in cancer, and as it is Blair's belief that this urinary tract infection is hematogenous in origin, it would seem a reasonable hypothesis that other tissues in the body would be subjected to the lodgment of micro-organisms in them by way of the blood and that this bombardment of traumatized or irritated tissues by hematogenous infection, from a chronic focus of low grade infection, is indirectly the cause of cancer. It may well be that the actual energizing factor in the continued growth of the cells is chemical in nature and that it is partially influenced by certain toxins given off by the chronic focus of infection, also by the lessened alkalinity of the blood in this condition, and also by chemical substances set free by the destruction of the blood-borne micro-organisms at the site of the cancer, this chemical substance either being derived from the destroyed bacteria or from the body of the leukocyte or macrophage that may be destroyed while destroying the micro-organism. From a review of the literature and especially from experience with focal infection it seems evident that, in all cases of a chronic focus of infection, such as abscessed teeth, pyorrhea, diseased tonsils and adenoids and chronic sinusitis, a secondary hematogenous infection is set up in the urinary tract, and therefore that pyuria of any degree of chronicity, recurring or failing to respond to treatment, is a strong indication of a chronic focus of infection outside the urinary tract. Dependent on acceptance of these conclusions, Blair says that the prophylaxis and prevention of cancer embraces the discovery of urinary tract infection and the search for, discovery and removal of chronic foci of infection.

Blood Cholesterol Studies in Cancer.—The partitioning of total fatty acids, lecithin and cholesterol was determined by Mattick and Buchwald in the whole blood and plasma of twenty-one unselected cancer patients and ten healthy controls while in a postabsorptive state. Values for the corpuscles were calculated from the data obtained. There appears to be a tendency in cancer to a hypercholesterolemia in the plasma with little change in the corpuscles. Lecithin values fail to show significant changes except for slightly lower values in the plasma. Total fatty acids show the most marked changes, being especially higher than normal values in the plasma, with a lesser but similar tendency in the corpuscles. Thus it would

appear in cancer that either fat absorption is increased or the utilization decreased with resulting accumulation of total fatty acids and fats especially in the plasma.

Journal of Infectious Diseases, Chicago

45: 79-162 (Aug.) 1929

Occurrence of Nontoxic Strains of Clostridium Parabotulinum: XXXIV. J. B. Gunnison and K. F. Meyer, San Francisco.—p. 79.
Comparative Study of Nontoxic and Toxic Strains of Clostridium Parabotulinum: XXXV. C. T. Townsend, San Francisco.—p. 87.
European Strains of Clostridium Botulinum: XXXVI. K. F. Meyer and J. B. Gunnison, San Francisco.—p. 96.
South African Cultures of Clostridium Botulinum and Parabotulinum: XXXVII. K. F. Meyer and J. B. Gunnison, San Francisco.—p. 106.
Cultural Study of International Collection of Clostridium Botulinum and Parabotulinum: XXXVIII. J. B. Gunnison and K. F. Meyer, San Francisco.—p. 119.
Botulism Due to Home Canned Bartlett Pears: XXXIX. K. F. Meyer and J. B. Gunnison, San Francisco.—p. 135.
Effect of Heating Syphilitic Serum and Protein Fractions on Precipitation Reaction. M. Nishio, Ann Arbor, Mich.—p. 148.
*Occurrence of Bacillus Sordellii in Icterohemoglobinuria of Cattle in Nevada. I. C. Hall, Denver.—p. 156.

Occurrence of Bacillus Sordellii in Icterohemoglobinuria of Cattle in Nevada.—Two strains of a previously unidentified pathogenic anaerobe isolated in 1919 and 1921 by L. R. Vawter of Reno, Nevada, from typical cases of icterohemoglobinuria in cattle and against which he prepared an effective antitoxic serum have been proved to belong to the species *Bacillus sordellii*. This is the third locality in the world in which *B. sordellii* has been recognized, previous cultures having been isolated in Argentina and in New York from human beings. The Nevada strains of *B. sordellii* are regarded as probably secondary invaders in icterohemoglobinuria, the primary cause of which is believed to be *Bacillus hemolyticus*. Hall says that *Bacillus hemolyticus* resembles *B. sordellii* in its vegetative morphology and gram-staining reaction, its sluggish motility, its fermentation reactions with the exception of maltose, and its action on gelatin, and differs from *B. sordellii* in its sparse production of spores by old cultures, its weaker proteolytic action, its failure to ferment maltose, its hemolytic action on blood in culture medium, its marked tendency to produce congestion in animals, and in the specific antigenicity of its soluble toxin.

Journal of Laboratory & Clin. Medicine, St. Louis

14: 1017-1128 (Aug.) 1929

Alimentary Tract of Man: I. Attainment of Reliability in Gastric Responses. T. W. Todd and W. Kuenzel, Cleveland.—p. 1017.
Corynebacterium Ulcerans: Epidemiologic Importance. R. Gilbert and F. C. Stewart, Albany, N. Y.—p. 1032.
Color Change Observed in Blood Chloride Determinations After Upper Gastro-Intestinal Tract Obstruction. R. L. Haden and T. G. Orr, Kansas City, Kan.—p. 1037.
*Nostril Reflex in Lung Disease. H. Bieler, Pasadena, Calif.—p. 1039.
Bacteremia Due to Eberthella Bentolensis. R. A. Kilduffe, W. B. Stewart and W. W. Hersohn, Atlantic City, N. J.—p. 1043.
*Nature of Depressor Substance in Hepatic Extract. A. Goerner and F. L. Haley, New York.—p. 1047.
Alleged Synergism of Magnesium Sulphate and Morphine. H. Beckman, Milwaukee.—p. 1050.
Comparative Inhibiting Effect of Gentian Violet and Mercurochrome on Growth of Certain Fungi. E. W. Stearn and A. E. Stearn, Columbia, Mo.—p. 1057.
*Studies of Sedimentation of Erythrocytes. H. F. Hunt, Rochester, Minn.—p. 1061.
Study of Retention Nephritis. J. R. Nakada, St. Louis.—p. 1077.
Potassium Ferricyanide Method for Determination of Reducing Substances Present in Blood. H. L. Bryant, New York.—p. 1082.
Benzidine Reaction. R. G. Bramkamp, Banning, Calif.—p. 1087.
Bence-Jones Protein in Blood Serum Leading to Detection of Multiple Myelomatosis: Case. J. J. Short and J. R. Crawford, New York.—p. 1092.
Use of Sodium Citrate as Anticoagulant in Chemical Examination of Blood. S. L. Leiboff and I. S. Witchell, New York.—p. 1094.
Wassermann Reaction of Human Milk: 107 Cases. J. Jarcho, New York.—p. 1097.
Method for Serial Sections in Celloidin. E. P. Fowler, Jr., New York.—p. 1103.
Attempt at Microscopic Observation of Living Tissue. W. C. Chaney and L. G. Rowntree, Rochester, Minn.—p. 1105.
Automatic Filtering Device. M. G. Gichner, Baltimore.—p. 1108.
New Head Holder for Guinea-Pig Board. S. G. Ramsdell, Philadelphia.—p. 1109.
Modification of Bell Type of Stethoscope. B. Gordon, Philadelphia.—p. 1111.

Nostril Reflex in Lung Disease.—Bieler presents evidence which indicates that there is probably a reflex arc between the air-cell capacity of the lungs and the size of the nostrils. As pulmonary destruction progresses, the nostrils, always on sides corresponding to the lungs involved, show atrophy.

Nature of Depressor Substance in Hepatic Extract.—As a result of their investigations on liver extract, Goerner and Haley believe that the depressor substance is monopotassium dihydrogen phosphate with possibly traces of other potassium salts aiding this action. It would also seem that the potassium ion is the active depressor agent since other phosphates fail to cause depression and other potassium salts react positively.

Sedimentation of Erythrocytes.—Hunt carried out experiments to determine if possible whether a relationship exists between the fibrinogen content of the blood expressed as fibrin, the sedimentation index and the clinical condition of the patient. He found that variations of the fibrin content of the blood or of the cell volume (as expressed by the erythrocyte count) exert a marked influence on the sedimentation reaction. It must be admitted that factors other than those mentioned play a part in causing the sedimentation of erythrocytes. During menstruation and pregnancy, the fibrin content of the blood increases and the sedimentation index is higher. The test is known to be of practical value: (*a*) in determining the degree of activity of a tuberculous process, (*b*) as an aid in the differential diagnosis of gynecologic lesions, and (*c*) as an index of the degree of activity present in pelvic infection. In all of the conditions mentioned there is no degree of specificity in the test, and the clinical and laboratory data must be carefully considered. In cases of hypertension, sedimentation indexes are usually high.

Journal of Pharmacol. & Exper. Therap., Baltimore

36: 507-694 (Aug.) 1929

Control of Respiration in Domestic Duck (Anas Boscas). M. S. Dooley and T. Koppányi, Syracuse, N. Y.—p. 507.
Effect on Rat and Rabbit Tissues of Ephedrine Sulphate, Epinephrine Chloride and an Epinephrine-Like Substance. E. J. Doty, Ann Arbor, Mich.—p. 519.
Administration of Large Amounts of Ammonium Salts of Organic Acids. V. J. Harding and L. N. Silverthorne, Toronto.—p. 525.
I. Action of Ephedrine, Pseudo-Ephedrine and Epinephrine on Bronchioles. E. E. Swanson, Indianapolis.—p. 541.
Effects of Ephedrine and Epinephrine on Blood Pressure, Pulse and Respiration: Alteration by Cocaine. M. L. Tainter, San Francisco.—p. 569.
*Oxytocic Substance of Cerebrospinal Fluid. H. B. Van Dyke, P. Bailey and P. C. Bucy, Chicago.—p. 595.
*Toxicity of Synthalin. W. G. Karr, W. P. Belk and O. H. Petty, Philadelphia.—p. 611.
*Effects of Excessive Doses of Irradiated Ergosterol in Growing Rats and Dogs. G. F. Cartland, J. H. Speer and F. W. Heyl, Kalamazoo, Mich.—p. 619.
Effect of Intestinal Movements of Certain Salts Administered Intravenously. N. B. Dreyer and T. Tsung, Montreal.—p. 629.
Heart Tonics: I. Variable Response of Frog Heart to Action of Drug. W. Nyiri and L. DuBois, New Brunswick, N. J.—p. 635.
Specific Action of Ergot Alkaloids on Sympathetic Nervous System. E. Rothlin, Basle, Switzerland.—p. 657.

Oxytocic Substance of Cerebrospinal Fluid.—Van Dyke et al. assert that the oxytocic substance of cerebrospinal fluid appears to be calcium. Reduction of the calcium to a concentration equaling that of an artificial "cerebrospinal fluid" bathing the isolated uterus abolishes the oxytocic action and yet causes no destruction or removal of true posterior lobe oxytocic principle. Properly preserved human ventricular and lumbar fluids of normal calcium concentration have an oxytocic effect. The melanophore-expanding effect of cerebrospinal fluid and serum may be due to differences between their calcium concentrations and those of artificial fluids used in the limb perfusion method of assay.

Toxicity of Synthalin.—Karr et al. found that the daily oral administration of synthalin, in amounts paralleling the human therapeutic dose, produces in dogs, after a period of a few weeks, definite toxic symptoms and finally death. Its nephrotoxic action is shown by a progressive nonprotein nitrogen retention in the blood, albumin and casts in the urine, and, at necropsy, definite lesions in the kidney. Microscopic study of the kidney shows, in particular, degeneration of the tubules. There is a terminal bilirubinemia and at necropsy the liver shows fatty degeneration. These evidences of the toxicity of synthalin would suggest extreme caution in its clinical administration.

Effects of Excessive Doses of Viosterol in Growing Rats and Dogs.—Cartland et al. conclude that when the vitamin content of the diet is complete and adequate, an increase of the

vitamin D intake in normal, growing rats and dogs, up to a thousand times the minimum effective dose, produces no effect on growth, calcium and phosphorus metabolism, blood calcium or phosphorus, or on the histologic structure or calcium content of the tissues.

Medical J. & Record, New York

130: 181-240 (Aug. 21) 1929

Practice of Sociological Medicine. A. B. Jackson, Washington, D. C. —p. 181.
Color Vision Tests. A. D. Bush, Decatur, Ga.—p. 184.
Influenzal Deafness. G. M. McAuliffe, New York.—p. 185.
Roentgenography of Uterus and Fallopian Tubes. D. Feiner, New York. —p. 186.
Speech in Medicine. W. B. Swift, Boston.—p. 192.
Thoughts on Splinting of Varicose Veins. D. H. Stewart, New York. —p. 196.
Malnutrition in Children. H. H. Perlman, Philadelphia.—p. 197.
Survey of Ward 155 in Los Angeles General Hospital. N. C. Paine, Glendale, Calif., and E. Bond, Los Angeles.—p. 199.
Necropsies (1928). G. B. Desparois and S. J. Glass, Los Angeles.—p. 200.
Diverticulum of Urinary Bladder. W. C. Pugh, New York.—p. 203.
Misleading Urologic Symptoms. L. Nagorsky, New York.—p. 209.
Circumcision. R. I. Bromley, Sonora, Calif.—p. 212.
Chronic Prostatitis: Rôle in Etiology of Sacro-Iliac and Spinal Arthritis. J. W. Visher, Evansville, Ind.—p. 214.
Primary Mumps Orchitis Without Parotitis. M. A. Rabinowitz and B. Seligman, New York.—p. 215.
History of Suprapubic Prostatectomy. E. W. Hirsch, Chicago.—p. 216.
Children of Renaissance and Medicine: VI. Burton and His Melancholy. J. Wright.—p. 219.
Lying About Simple Viper. W. R. Riddell, Toronto.—p. 222.

Michigan State M. Soc. Journal, Grand Rapids

28: 603-666 (Sept.) 1929

Shall We Operate on Acute Pus Tubes? M. Burnell, Flint.—p. 603.
Physician's Reminiscences. C. H. Baker, Bay City.—p. 606.
Group Practice. A. O. Hart, St. Johns.—p. 614.
Early Diagnosis of Uterine Cancer. F. C. Witter, Detroit.—p. 618.
Treatment of Abortions. B. L. Connelly, Detroit.—p. 623.
Treatment of Surgical Tuberculosis by Heliotherapy. A. B. Olsen, Battle Creek.—p. 626.
*Treatment of Trophic Ulcers by Alcoholic Injection of Blood Vessels. C. F. McClintic, Detroit.—p. 630.
Carcinoma of Upper Lid Plastic Operation: Case. G. E. Frothingham, Detroit.—p. 632.

Treatment of Trophic Ulcers by Alcoholic Injection of Blood Vessels.—The conditions in which McClintic has used the alcoholic injections are (*a*) generalized senile arteriosclerosis; (*b*) varicose ulcers; (*c*) chronic indolent ulcers of unknown etiologic origin; (*d*) endarteritis obliterans, and (*e*) Raynaud's disease. The procedure is also indicated in (*a*) chronic arthritis deformans; (*b*) painful acroparesthesia, and (*c*) as a preliminary procedure to the amputation of an extremity for gangrene in that the amputation can be done more safely at a lower level. The femoral artery is exposed in the lower two thirds of Scarpa's triangle. With a very fine needle, from 1 to 2 cc. of 95 per cent alcohol is injected into the loose tissue until an alcoholized ring, or collar, completely encircles the artery. In order to reach the back of the artery, it is rotated with forceps. The effect of alcoholic injection is immediate. It is not preceded by a period of vasoconstriction, as is the case in periarteriorraphy. There is an immediate change in pulse volume below the site of injection. The extremity operated on immediately becomes flushed and warm. The effects are more permanent than in a periarteriorraphy; the results from the latter disappear in a couple of months or less. The risk of injuring the blood vessel is practically nil in making the injection. The shock of the operation is of little consequence and the time necessary for the completion of the operation is only a few minutes. The end-results have been lasting and gratifying.

New England J. of Medicine, Boston

201: 345-394 (Aug. 22) 1929

*Influence of Thyroid Gland on Action of Morphine. C. C. Lund and E. B. Benedict, Boston.—p. 345.
General Practitioner and His Work. C. G. Lane, Boston.—p. 353.
Outbreak of Mild Smallpox in Massachusetts Community. R. P. MacKnight and C. L. Scamman, New Bedford, Mass.—p. 361.
Physician Speaks for Himself Concerning Venereal Diseases. E. G. Crabtree, Boston.—p. 362.
Some Pitfalls in Physical Examination of Infants and Children. J. L. Morse, Boston.—p. 366.
Progress in Syphilis, 1923. A. W. Cheever, Boston.—p. 369.

Influence of Thyroid Gland on Action of Morphine.—The effect of morphine on the metabolism of four rabbits was studied by Lund and Benedict and each rabbit was observed in the normal, hyperthyroid and hypothyroid states. A large dose of morphine caused a drop of about 10 per cent in the metabolism of the normal rabbit. The same dose of morphine caused a drop of 20 per cent in the metabolism of a hypothyroid rabbit. No change was produced by the same dose of morphine on the metabolism of the hyperthyroid rabbit. The rate of metabolism of hypothyroid rabbits after a dose of morphine was extraordinarily constant.

201: 395-444 (Aug. 29) 1929

Complications of Tuberculosis, Hemoptysis, Pleurisy and Spontaneous Pneumothorax. H. B. Campbell, Norwich, Conn.—p. 395.
Tuberculosis of Intestines. W. A. Griffin, Sharon, Mass.—p. 401.
*Quartz Light Therapy in Pulmonary Tuberculosis. F. E. O'Brien.—p. 403.
Laryngeal Tuberculosis. C. H. Ernlund, Boston.—p. 408.
*Effect of Bronchitis, Influenza and Pneumonia on Pulmonary Tuberculosis. F. T. Lord, Boston.—p. 410.
Review of Cases of Pellagra Admitted to Boston Psychopathic Hospital from 1922 to 1928; Alcohol as Etiologic Factor. R. H. Guthrie, Palmer, Mass.—p. 414.
Avitaminotic Depressions. D. Gregg, Wellesley, Mass.—p. 420.
Alkaptonuria. E. S. Bagnall, Groveland, Mass.—p. 422.

Quartz Light Therapy in Pulmonary Tuberculosis.—O'Brien has found artificial heliotherapy combined with sanatorium routine a valuable adjunct in the treatment of pulmonary tuberculosis. He says that it is an effective aid in assisting the reduction of temperature and building up the general resistance of the patient. The very far advanced cases with high temperature do not gain any advantage in artificial heliotherapy because of effort required in treatment. Hemoptysis is not a contraindication to artificial heliotherapy. Artificial heliotherapy without rest treatment would not be very beneficial in pulmonary tuberculosis. A marked decrease in lung moisture and decrease in severity of cough is especially noticeable with quartz light therapy. There is no advantage in producing erythema in treatment, and gradual tanning is not necessary. Artificial heliotherapy has a sedative effect on the patient. It assists the natural healing processes in tuberculosis by assisting expectoration in the beginning and later in reducing the amount.

Effect of Bronchitis, Influenza and Pneumonia on Pulmonary Tuberculosis.—Lord found considerable difficulty in obtaining evidence regarding the influence of acute respiratory infection on the course and outcome of pulmonary tuberculosis. Acute coryza and other mild respiratory infections are the initial manifestations in a large proportion of patients with phthisis, but occur so frequently in those without this disease as to make their influence doubtful. Influenza appears to be an unfavorable complication. The effect of pneumonia is uncertain. On the whole it seems probable, though not satisfactorily established, that acute respiratory infections tend to excite pulmonary tuberculous lesions to greater activity and hasten the fatal termination.

Occupational Therapy & Rehabilitation, Baltimore

8: 231-315 (Aug.) 1929

Standards in Occupational Therapy. T. B. Kidner, New York.—p. 243.
Functional Restoration at Reconstruction Clinic (Private Rehabilitation Clinic). M. Shimberg, Syracuse, N. Y.—p. 249.
Reconstruction Clinic in Functional Restoration. M. Clark.—p. 259.
Unit Construction of Occupational Therapy Building. L. J. Haas, White Plains, N. Y.—p. 265.
Importance of Eye Health in Occupational Therapy. W. Hathaway. —p. 281.
Occupational Therapy North of 53. H. R. Punnett.—p. 291.
Color and Dyeing of Materials. L. L. Peasley.—p. 295.

Pennsylvania M. Journal, Harrisburg

32: 749-826 (Aug.) 1929

Congenital Heart Disease in Children. H. H. Jenks, Philadelphia. p. 749.
*Value of Electrocardiogram in Study of Children's Hearts. J. M. Lichty, Pittsburgh.—p. 751.
Large Thrombus of Pulmonary Artery with Chronic Cyanosis and Polycythemia. H. D. Jump and F. Baumann, Philadelphia.—p. 754.
Diphtheria Prevention in Philadelphia. E. L. Bauer, Philadelphia. —p. 756.
Essential Facts Concerning Roentgenologic Diagnosis of Pulmonary Tuberculosis. H. K. Pancoast, Philadelphia.—p. 757.
Refraction Change Due to Chalazion. W. S. Reese, Philadelphia. —p. 764.

Herpes Zoster Ophthalmicus Apparently Due to Chronic Frontal Sinusitis. J. E. Landis, Reading.—p. 765.
Irido-Avulsion. F. B. Harding, Allentown.—p. 766.
Malignancy of Tonsil. H. Dintenfass, Philadelphia.—p. 767.
Acromegaly: Eye and Ear Findings. W. J. Hertz, Allentown.—p. 768.
Carcinoma of Bladder Without Recurrence for Two Years. B. M. Hance, Easton.—p. 769.
Appendicitis Simulating Disease of Right Urinary Tract. J. E. McDowell, Pottsville.—p. 770.
Encysted Calculus of Prostatic Urethra. S. M. Hankey, Pittsburgh. —p. 770.
Unusual Type of Ulceration of Bladder. A. L. Ruth, Philadelphia. —p. 771.
Crossed Renal Dystopia. F. S. Schofield, Philadelphia.—p. 772.
Chorea Caused by Impacted Teeth. J. P. Ritenour, State College. —p. 773.

Value of Electrocardiogram in Study of Children's Hearts.—Thirty-one per cent of 100 cases studied by Lichty showed abnormalities of significance. Of the various clinical groups, the congenital showed approximately 50 per cent abnormal; the late mitral stenoses and mitral stenoses with pericarditis, 33⅓ per cent; the mitral insufficiencies and the group for diagnosis, 25 per cent each. The P-wave changes were most frequent in the mitral-insufficiency group, 25 per cent. Slurring of the Q-R-S group was found only in the advanced cases and congenital conditions. No exception as to normals previously established were found. A slight preponderance, either right or left, is not a reliable guide in children.

Philippine Islands M. Assoc. Journal, Manila

9: 229-264 (July) 1929

Plasmochin and Quinine in Prophylaxis and Prevention of Malaria Relapses. A. Ejercito.—p. 229.
Are Filipinos Undernourished? F. O. Santos.—p. 235.
Vitreous Opacities in Cataract Cases. A. R. Ubaldo and C. D. Ayuyao. —p. 239.

Public Health Reports, Washington, D. C.

44: 1935-1994 (Aug. 9) 1929

Endemic Typhus of Southeastern United States: Reaction of White Rat. K. F. Maxcy.—p. 1935.
Outline of Project for Study of Negro Health in Tennessee. E. L. Bishop.—p. 1944.

44: 1995-2040 (Aug. 16) 1929

Report of Departmental Committee on Morphine and Heroin Addiction to British Ministry of Health. W. L. Treadway.—p. 1995.
Current Malaria Studies: Control Measures. L. L. Williams, Jr. —p. 2001.

44: 2041-2092 (Aug. 23) 1929

Postvaccinal Encephalitis. C. Armstrong.—p. 2041.
Pan-American Sanitation. J. D. Long.—p. 2044.
Seasonal and Regional Incidence of Types of Malaria Parasites. M. A. Barber and W. H. W. Komp.—p. 2048.

Radiology, St. Paul

13: 191-282 (Sept.) 1929

Self-Protecting Tubes and Influence on Development of Roentgen Technic. A. Bouwers, Eindhoven, Holland.—p. 191.
Surgical Procedures in Carcinoma of Rectum. F. W. Rankin, Rochester, Minn.—p. 207.
*Roentgen Examination of Heart in Beriberi. C. S. Keefer and C. K. Hsieh, Peiping, China.—p. 211.
Value of Roentgenologic Examinations in Otolaryngology. V. H. Fuchs, New Orleans.—p. 217.
*Duodenal Stasis. J. A. Evans, La Crosse, Wis.—p. 222.
Radiology as Medical Specialty. W. E. Chamberlain, San Francisco.— p. 229.
Status of Radiology in America. A. U. Desjardins, Rochester, Minn. —p. 234.
Radiologic Department in Hospital. C. L. Martin, Dallas, Texas.—p. 241.
*Intermittent Duodenal Stenosis. R. Hayes and A. B. Shaw, Longview, Wash.—p. 245.
Prognosis in Cancer. M. J. Sittenfield, New York.—p. 257.
Thoracic Stomach: Case. H. Morris, Manchester, England.—p. 265.

Roentgen Examination of Heart in Beriberi.—Keefer and Hsieh found the heart enlarged in all cases of beriberi with cardiac insufficiency. There was considerable cardiac enlargement in some patients without cardiac insufficiency. The enlargement was principally right-sided, involving the right auricle and ventricle, and the pulmonary artery was quite prominent in many. There was enlargement in the region of the superior vena cava. This shadow diminished with the decrease in the size of the right auricle. The left auricle and ventricle were enlarged to a lesser degree. The size and configuration of the heart changed completely following treatment, and assumed a normal size and shape after a varying length of time.

Duodenal Stasis.—Evans reports an incidence of 5.8 per cent for this condition. Clinically the following symptoms are suggestive of duodenal stasis: (1) Chronic dyspepsia, often associated with migraine, as emphasized by the French school, especially Duval. (2) A feeling of fulness, often accompanied by nausea, which usually occurs before a meal is finished. (3) Belching and sometimes vomiting soon after eating. The belching is usually prodigious. (4) Epigastric feeling of weight, sometimes amounting to cramping pains; more often immediately after eating; not relieved by soda or food. (5) This distress or pain often yields to the recumbent position, especially in those cases of stasis due to anomalous bands.

Intermittent Duodenal Stenosis.—Hayes and Shaw analyze forty-eight cases. In nineteen cases in which operation was performed, no other pathologic condition was found than that due to membranes or supposed mesenteric pressure. In the treatment the matter of diet assumes an important rôle, since only by marked gain in weight may intra-abdominal fat be deposited and thereby intra-abdominal pressure raised. Instead of carbohydrates, eggs and milk being eliminated from the diet, these, together with fats and sugars, are forced. Milk and cream with meals and at bedtime are prescribed, with also a light midmorning meal. Olive oil is taken before each meal. Attention to posture and malstatics is observed by absolute rest in bed for seven weeks, with the foot of the bed elevated 10 or 12 inches. Intestinal drag and abnormal bowel kinks thus being overcome, stasis theoretically is lessened. In fact, many of these patients so treated are less constipated than when leading an ambulatory life. In addition, gradually increasing exercises are outlined, the object of which is to increase the muscular tone of the lower abdominal wall, to expand the upper abdomen, and to contract the lower. Distress after eating is commonly relieved by turning the patient on the right side or abdomen for one hour after each meal, often happily combined with the application to the abdomen of local heat. Cathartics are avoided, except when necessary, and then a weekly saline may be given and a daily evacuation of the colon obtained by a glycerin suppository or a small saline enema. Hardened stool may be softened by an injection, retained over night, of from 4 to 6 ounces (120 to 180 cc.) of cottonseed oil. A properly fitting and specially designed belt is furnished at the end of the bed period, this to be laced in place in the Trendelenburg position. This routine is continued for several months, with the addition of gradually increasing walking exercises to the extent of from four to five miles a day. Patients are cautioned that symptoms are apt to recur with any marked loss in weight or relaxation in application of the treatment.

South Carolina M. Assn. Journal, Greenville

25: 481-502 (Aug.) 1929

Controllable Spinal Anesthesia. A. F. Burnside, Columbia.—p. 485.
Agranulocytic Angina: Case. J. J. Lindsay, W. P. Coan and R. P. Finney, Spartanburg.—p. 489.
Peroral Endoscopy as Aid to Diagnosis and Treatment of Disease. J. W. Jervey, Jr., Greenville.—p. 491.
Vasomotor Affections of Internal Ear. G. Portmann, Bordeaux.—p. 493.

Texas State J. of Medicine, Fort Worth

25: 259-320 (Aug.) 1929

Principles of Two Stage Operation as Applied to Surgery of Gallbladder. W. B. Russ, San Antonio.—p. 268.
Surgery of Bile Ducts. G. V. Brindley, Temple.—p. 269.
Too Frequent Disaster Following Cholecystectomy. C. S. Venable and B. Swinny, San Antonio.—p. 277.
*Factors Contributing to Recurrence of Urinary Calculi. R. E. Van Duzen, Dallas.—p. 281.
*Further Report on Treatment of Cancer of Cervix with Radium. O. L. Norsworthy, San Antonio.—p. 287.
Use of Glaukosan in Treatment of Glaucoma. R. K. Daily and L. Daily, Houston,—p. 292.
*Mesquite Tree Pollen as Cause of Hay-Fever: Ten Cases. E. D. Sellers, Abilene.—p. 297.
Diagnosis and Treatment of Insanity by Detection of Delusion. R. E. House, Ferris.—p. 299.
Raising Standard of Practice of Obstetrics. M. C. O'Brien, San Antonio. —p. 302.
Theophylline-Ethylenediamine in Relief of Heart Pain. D. W. Carter, Dallas.—p. 304.

Factors Contributing to Recurrence of Urinary Calculi.—Analysis of 100 cases has convinced Van Duzen that failure completely to remove all foci of infection is the most

common cause of recurrence of urinary calculus. Urinary stasis is an important factor in the production of recurrences, but is probably always associated with infection. Xanthine and cystine calculi are the results of faulty metabolism. Heredity is probably not a factor, but the history of calculi in other members of the family is a frequent finding. Drinking of distilled water and special diets are not indicated for the prevention of urinary calculi. Any patient with a suspicious urinary history, or with unexplained presence of pus or blood in the urine, should be given a complete urologic examination.

Treatment of Cancer of Cervix with Radium.—Norsworthy asserts that of 100 patients with cervical cancer applying for hysterectomy, only fifty can be accepted as operable, and of this number, eight will die from the operation. Of the forty-two patients surviving the operation, only fifteen (44 per cent) can hope to live over the five-year period. Of 100 patients applying for irradiation, practically all may be treated; a large majority benefited; the lives of many prolonged, and twenty-one of the fifty operable (44 per cent) may hope to pass the five-year period.

Mesquite Tree Pollen as Cause of Hay-Fever.—Sellers reports ten cases in which mesquite tree pollen was the cause of the hay-fever. Treatment with immunizing injections of an extract of mesquite pollen is followed by quick relief from symptoms.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

52: 127-270 (July) 1929

Tumor of Hypophyseal Stalk: Twenty-One Cases. J. W. Beckman and L. S. Kubie.—p. 127.
Pathology of Measles Encephalomyelitis. J. G. Greenfield.—p. 171.
Bicolored Guaiac Test. E. de Thurzo.—p. 196.
Heredofamilial Disease Resembling Disseminated Sclerosis. F. R. Ferguson and M. Critchley.—p. 203.
Tumors of Pineal, Corpora Quadrigemina and Third Ventricle: Interrelationship of Their Syndromes and Surgical Treatment. M. A. Glaser.—p. 226.

British J. Bio-Physics, London

1: 169-186 (Aug.) 1929

Treatment of Cervicitis by Ionization. C. A. Robinson.—p. 171.
Treatment of Surgical Tuberculosis by Light. J. Wilson.—p. 173.
Electrotherapy in Mental Illness. H. D. Cormac.—p. 174.
High Frequency in Therapeutics: I. Production of High Frequency Currents. E. Browning.—p. 177.
Ultraviolet Therapy: History and Development. A. Furniss.—p. 178.
Facial Paralysis of Palsy; Peripheral Facial Paralysis; Bell's Paralysis. F. W. Alexander.—p. 181.
Use of Electricity in Therapeutics: III. H. J. Taylor.—p. 184.

British Medical Journal, London

2: 285-330 (Aug. 17) 1929

*Syphilis of Heart and Aorta. J. Cowan and J. S. Faulds.—p. 285.
Diagnosis of Frontal Tumors. J. Collier.—p. 289.
Incidence of Disease of Bladder in Workers in Certain Chemicals. T. H. Wignall.—p. 291.
*Effect of Radiation on Resistance of Rabbits to Infection with Virulent Staphylococci. A. Eidinow.—p. 293.
Relation of Ear Conditions to Bathing. W. I. Daggett and R. Cove-Smith.—p. 296.
Arsenic Poisoning. C. H. C. Dalton.—p. 297.

Syphilis of Heart and Aorta.—Cowan and Faulds analyzed a series of 1,000 consecutive necropsies. Of these cases 390 presented some disease of the heart or aorta, judged by the naked-eye examination. The evidence from the pathologic side showed that sixty (15.3 per cent) were syphilitic. The chief pathologic lesions are endarteritis obliterans, aortitis, aortic valvular disease, gumma of the heart and myocardial fibrosis.

Radiation and Resistance to Infection with Virulent Staphylococci.—Eidinow asserts that previous prolonged irradiation of rabbits with a "daylight lamp" emitting infra-red, luminous and ultraviolet rays up to 2,850 angstrom units increases their resistance against virulent infection with staphylococci. Experiments in vitro show that after forty-eight hours' irradiation the hemobactericidal power is increased and a general leukocytosis is produced. There is not sufficient evidence to correlate these results with the increased resistance to infection. In the case of the hemobactericidal power as measured in vitro, the evidence obtained indicates that a high bactericidal power of the blood was not maintained during this method of prolonged irradiation. Irradiation of rabbits with an identical technic, after infection with virulent staphylococcus, gives no protection. Experiments indicate that the results are not due to the production of vitamins (A or D).

Journal of Hygiene, London

29: 117-226 (July) 1929

Chemicophysical Stability and Cancer. A. Eastwood.—p. 117.
*Relation of Decline in Number of Horse-Drawn Vehicles and of Urban Breeding Grounds of Flies to Fall in Summer Diarrhea Death Rate. G. S. Graham-Smith.—p. 132.
Epidemiology of Typhoid Fever: Incidence of Typhoid Carriers in General Population Group. I. M. Bromberg and R. Comaroff.—p. 139.
Id.: Observations on Spontaneous Seasonal Recurrence of Paratyphoid Epidemics Among Guinea-Pigs. I. J. Kligler.—p. 146.
Typhoid Fever in Palestine. I. J. Kligler.—p. 157.
*Influence of Age of Mother and Associated Factors on Mortality Rates in Childbearing. P. L. McKinlay.—p. 160.
*Unusual Bacillus Recovered from Cases Presenting Symptoms of Dysentery. F. H. A. Clayton and S. H. Warren.—p. 191.
Plague in Kenya. F. P. G. de Smidt.—p. 201.
Leptospira Icterohaemorrhagiae in Oxford Rats. A. D. Middleton.—p. 219.

Relation of Decline of Breeding Grounds of Flies to Fall in Summer Diarrhea Death Rate.—In towns, *Musca domestica* breeds chiefly in horse manure; if this species has any appreciable influence on the spread of the disease, the diminution in horse-drawn vehicles and consequently of horse manure should be accompanied by a diminution in the diarrhea death rate. During the last twenty years the number of horses kept in the larger cities of England has decreased probably by three fourths, and consequently there has been a great decrease in the available breeding places for *Musca domestica*. Except in the hot year 1921, the summer diarrhea death rate in England and Wales fell steadily from 1913 to 1922, when it reached the lowest level recorded. It has since remained at or near this low level. It is suggested by Graham-Smith that the decrease in the numbers of flies together with the effect of a more widespread knowledge of their capacity for distributing disease have been responsible to a considerable extent for the reduction in the death rate. By the rigid enforcement of a simple and inexpensive method such as that devised by Baber of destroying larvae in manure, which does not impair its agricultural value, and also in such garbage as is not incinerated, the numbers of flies in cities could be reduced immediately to a low level.

Influence of Age of Mother on Mortality Rates in Childbearing.—An attempt has been made by McKinlay to devise a method of determining mortality rates at ages from causes of death associated with childbearing. From all causes of death in childbearing, mortality follows this course: beginning with a high value in the age group 15-20, the rate drops to a minimum in the second quinquennium of reproductive life and thereafter gradually increases with age. The main components of the death rate exhibit a similar age distribution, but other less important causes of death show an uninterrupted increase with age from the commencement of the reproductive period. Eclampsia is much more common in young women, but this may be entirely due to the greater proportion of primiparas at these young ages. Estimated in terms of first births the death rate increases rapidly and steadily with age, subject to a small exception in the first quinquennium, which may possibly be a consequence of unfavorable marital selection at that age. The high puerperal mortality of young mothers cannot wholly be accounted for by the excessive dangers of primiparity. Evidence, however, has been submitted that these young women are on the average a less healthy sample of the total female population at that age and that, apart from primiparity and adverse selection, the death rate from causes arising from childhood probably follows the same law of mortality as of women in general from all other causes of death. There has been within recent years a decline of nearly 50 per cent in the puerperal mortality in young mothers of 15-20 and a smaller decrease in the second quinquennium of reproductive life; but there is no evidence of any improvement at later ages. These phenomena have been brought into relation with the change that has taken place in the death rate from all other causes in

married women at these ages. The youngest group of married women, relative to unmarried women of the same age, were in the more recent period studied in a much more favorable position with regard to their mortality from causes other than those connected with childbearing than they had been formerly. No corresponding improvement has taken place in the relative mortalities from all other causes in older women within the childbearing ages. These results suggest that the general health of the mother is a factor of great importance in determining the height of the mortality rate in pregnancy.

Unusual Bacillus Recovered from Patients with Symptoms of Dysentery.—Clayton and Warren describe an unusual organism recovered from the feces of a number of children who suffered from symptoms of bacillary dysentery and who did not show evidence of the presence of any of the recognized pathogenic organisms found in that disease. The bacillus was isolated without difficulty in all instances examined in the acute stage, and specific agglutinins were present in the blood serum of all tested for them. It is suggested that this organism be named the "Newcastle dysentery bacillus."

Lancet, London

2: 261-312 (Aug. 10) 1929

Experiments on Frogs and Men. A. V. Hill.—p. 261.
Treatment of Chorea by Nirvanol. F. J. Poynton and B. Schlesinger. —p. 267.
*Asthma and Hay-Fever. J. E. R. McDonagh.—p. 271.
*Antidysentery Bacteriophage in Treatment of Bacillary Dysentery: Sixty-Six Cases. A. Compton.—p. 273.
Simplification of Halo Method of Measuring Diameter of Red Blood Corpuscles. D. M. Pryce.—p. 275.
Lobar Pneumonia in Child: Case. K. McFadyean.—p. 276.
Hyperthyroidism with Mania: Case. J. M. Black.—p. 277.

Asthma and Hay-Fever.—McDonagh asserts that asthma and hay-fever are symptoms of inherited disease caused by the precipitation of hydrated protein particles and by the lack of oxygenated blood in the respiratory tract. The chief signs and symptoms of inherited disease are malcoordination and a chronic intestinal intoxication. Asthma and hay-fever can usually be prevented by correcting the malcoordination and removing the chronic intestinal intoxication. Asthma and hay-fever are not diseases. Asthma is not caused by a stimulation of the vagus occasioning a constriction of the bronchioles. When epinephrine palliates an attack it does so by causing the hydrated protein particles to disperse, not by stimulating the sympathetic nervous system. Asthma and hay-fever can usually be overcome with drugs able to cause dispersion of the hydrated protein particles. These measures are really no more than palliative, and a "cure" can result only in the prevention of inherited disease.

Antidysentery Bacteriophage in Treatment of Bacillary Dysentery.—In 200 cases of dysentery, Compton used a therapeutic phage of multiple origin and polyvalent quality. It consisted initially of four phage strains: one passed to him by d'Herelle and three others isolated by himself in Egypt. The mixture was put up against sixteen-hour broth cultures of twelve local strains of dysentery bacilli: two Shiga, three Flexner, six Hiss (including one Sonne), and one Gay. The Hiss type constitutes the predominating organism in the Alexandria region. Complete lysis of the cultures occurred after a few hours in the incubator at 37 C. After twenty-four hours' incubation the lysates were mixed and filtered through a filter impregnated with infusorial earth, and later through an L2 Chamberland filter. The filtrate constituted the therapeutic phage. It was transferred to sterile ampules in quantities of approximately 2 cc. Three ampules were, as a rule, distributed to each patient undergoing treatment. A review of results is based on replies to inquiry received from sixty-six patients. The result of phage was very good in thirty-five of the sixty-six cases, good in ten, moderately good in six, a partial failure in five, and a failure in ten. On the severest possible analysis there were forty-five successes. This represents a minimum percentage success for the treatment of 72.6. Of the failures, three patients had been ill for a week—maybe more—before the phage treatment was begun; two of them were children less than 1 year old. The good effect was the more marked, the earlier the treatment was begun; it was relatively less favorable, the younger the patient. It was particularly successful in patients aged 10 years and upward. Patients with proteus group organisms—especially *Bacillus proteus* number 2—in the intestinal flora did not do so well. Incidentally, during the progress of the treatment and side by side with it, a noteworthy lowering in death rates from dysentery was recorded.

2: 313-362 (Aug. 17) 1929

Treatment of Varicose Veins and Varicose Ulcers by Injection. R. T. Payne.—p. 313.
Pathologic Effects of Streptococcal Toxin and Hemolysin on Rabbits. R. J. V. Pulvertaft.—p. 318.
Internal Derangements of Knee-Joint. P. B. Roth.—p. 325.
Association of Human and Canine Jaundice: Case. C. J. M. Lawrence and C. C. Okell.—p. 327.
*Mode of Action of Irradiated Ergosterol on Myelin Forms of Lecithin. C. J. Bond.—p. 328.
Ileocecal Intussusception with Spontaneous Reduction: Case. S. M. Power.—p. 329.

Mode of Action of Viosterol on Myelin Forms of Lecithin.—Bond presents evidence, based on experimental and direct observation, which suggests that viosterol (vitamin D) exerts its influence primarily on the lipoid rather than on the protein elements in the cell. In this way it renders the cytoplasmic and perinuclear lipoid membranes more permeable, and increases nuclear cytoplasmic interchange. These observations, if applied to rickets, suggest that the vitamin D acts on the bone cells concerned in calcification and speeds up their calcium-phosphorus metabolism by acting on the lipin constituents (especially the lecithin moiety) of the cells, and, by facilitating interchange through the pericellular and perinuclear membranes, enables these cells to extract the calcium phosphate from the blood.

China Medical Journal, Shanghai

43: 655-755 (July) 1929

*Ambulatory Treatment of Fractures of Leg by Use of Delbet Plaster Walking Splint. G. L. Hagman.—p. 655.
*Dysentery Complicating Pregnancy and Puerperium. S. Lee.—p. 666.
Cervicitis. J. R. B. Branch.—p. 678.
Problem of Paralytic Dementia in China and Treatment with Malaria. M. O. Pfister.—p. 683.
Hypertonic Saline Solution in Acute Poisoning. D. E. Galbraith.—p. 694.
School Health in Peiping Special Health Area. I. C. Fang and T. A. Li. —p. 697.
Mercurochrome in Treatment of Malignant Tertian Malaria and Neuralgia Following Centipede Bite: Two Cases. H. L. Liu.—p. 706.

Delbet Plaster Walking Splint for Ambulatory Treatment of Fractures of Leg.—Hagman has used this splint to reduce the period of hospitalization in cases of acute fracture of the leg. It is effective also in preventing delayed union. The splint consists of two lateral strips of plaster extending from just above the level of the head of the tibia down to a half inch from the sole of the foot. These are molded to conform to the leg, fitting snugly the expanded head of the tibia and fibula above, and to the two malleoli below. These two lateral thrust resisting strips are held in firm contact with the subcutaneous bony prominences by a circular collar of plaster above and below. These two collars, being snugly applied to bony prominences, do not usually offer obstruction to the circulation. Hagman uses plaster roller bandages for making the splint instead of crinoline. The average stay in the hospital for the patients treated by Hagman was twenty-one days. Owing to early, active motion, muscular atrophy and joint stiffness are reduced to a minimum, thus shortening the total period of disability. Delayed union is practically eliminated by the use of this splint. The materials used to make the splint are inexpensive and easily obtainable. Because the patient can early return home and take up light duties, it is at once an economical and efficient method of treatment. In recent fractures the splint should be applied immediately after fracture. If applied before swelling has occurred, it must be carefully watched and, if needful, the circular collars may be split to reduce the constriction. If applied during the period of swelling, renewal of application may be required when the first splint becomes loose.

Dysentery Complicating Pregnancy and Puerperium.—Lee reports thirty-eight cases of dysentery among pregnant women. Twenty-eight of these patients had bacillary dysentery; five, amebic dysentery; three, double infection, and two, amebiasis. Eight of these developed the dysentery after delivery. The commonest time for pregnant women to contract dysentery is during the eighth or ninth months of pregnancy. Premature

labor is likely to occur, probably caused by the dysentery toxin, high fever and severe tenesmus. Postpartal dysentery develops usually about the fourth or sixth day after delivery. These all appeared to be bacillary in nature. There are two main lines of attack in treating this disease: diet and medication.

Journal de Radiologie et d'Électrologie, Paris

13: 369-416 (July) 1929

*Roentgen Examination of Spinal Column, Spinal Cord, Cranium and Brain with Iodized Oil. Haguenau and Gally.—p. 369.
*Diathermy and Roentgen Irradiation in Treatment of Arteritis Obliterans. L. Delherm and H. Beau.—p. 383.
Measurement of Penetrating Rays. G. Gueben.—p. 389.
Antidiffuser for Roentgen Examination of Lungs. J. Stephani.—p. 393.
Stenosis of Small Intestine as Result of Tumor of Stomach. B. de Laborie and Camentron.—p. 397.
Spina Bifida. C. Arif.—p. 399.

Roentgen Examination of Spinal Column, Spinal Cord, Cranium and Brain with Iodized Oil. — Haguenau and Gally discuss their experiences in the roentgen examination of the spinal column, spinal cord, cranium and brain after the injection of iodized oil according to Sicard's technic. Examination of the lateral ventricles did not prove satisfactory and is as yet therefore not advised. A complete picture of the subarachnoidal space could not be obtained, but certain irregularities, when present, aided in the diagnosis. Roentgen examination of the cranial sinuses on the other hand gave satisfactory results. The convolutions of the brain, also, were made evident. In exploratory trepanation the injection of iodized oil has proved its value for determining the location and extent of brain cysts. The method is especially valuable for facilitating the diagnosis in compression of the spinal cord.

Diathermy and Roentgen Irradiation in Treatment of Arteritis Obliterans.—The effect of diathermy in the treatment of arteritis obliterans was studied in fourteen patients by Delherm and Beau. They obtained good results in nine patients, the diathermy producing local vasodilatation. Seven of these patients were completely cured. Three patients received roentgen irradiation following diathermy; only one responded to the treatment. Delherm and Beau advocate in all cases a combination of treatments; the application of ultraviolet rays and diathermy and dietary factors are of importance in changing the local condition as well as the metabolism of the patient.

Paris Médical

2: 37-52 (July 13) 1929

*Anovesicogenitoperineal Syndrome in Sacral Locomotor Ataxia. P. Carnot.—p. 37.
*Treatment of Rheumatism with Radon and Thoron. H. Dausset and Massina.—p. 43.

Anovesicogenitoperineal Syndrome in Sacral Locomotor Ataxia.—Carnot describes a case of sacral tabes dorsalis in which the characteristic syndrome of anovesical incontinence, genital impotence and perineal anesthesia was present. A second patient with diabetes presented the symptoms of anovesical incontinence and perineal anesthesia. At necropsy in the second case lesions of the pancreas and of the terminal portion of the spinal cord were found but the cauda equina was normal. From the study of these cases Carnot concludes that sacral locomotor ataxia with the disturbances mentioned is a final stage in syphilis. The condition is especially resistant to treatment.

Treatment of Rheumatism with Radon and Thoron.—Dausset and Massina report their results with the use of radon and thoron in the treatment of rheumatism in twenty-eight patients. The treatment was especially effective in cases of subacute rheumatism and gout; pain was relieved and in one case the elimination of urates was inhibited during the period of injections. In gonorrheal rheumatism and in arthritis deformans the pain was alleviated but the condition remained unchanged. Dausset and Massina advocate further investigation of this method of treatment.

Presse Médicale, Paris

37: 813-828 (June 22) 1929

*Radiating Pain in Cholecystitis. F. Ramond and P. Chêne.—p. 813.
Plaster-of-Paris Casts with Free Chamber Permitting Straightening of Leg. Ducroquet.—p. 814.
*Fissure of Sternum. H. Barillet.—p. 817.
Determination of Blood Group Before Transfusions. C. Simonin.—p. 818.

Radiating Pain in Cholecystitis. — Ramond and Chêne discuss the problem of pain in diseases of the gallbladder and biliary tract. Their study was especially directed toward occipital pain and pain in the left hypochondrium. The onset of the occipital pain is sudden; it appears typically when the patient awakes in the morning and is aggravated by the ingestion of food, being especially intense from three to four hours after meals. The outstanding characteristic is its disappearance when the acute or subacute irritation of the gallbladder has been quieted by medication. The hypochondriac pain may be initiated by actual pressure on the gallbladder. It is of short duration and extends upward to the base of the ribs and down toward the umbilicus about two to three fingerbreadths beyond the median line. It is never as severe, however, as the pain that occurs in gallstone colic. Although these pains are not of great diagnostic value, Ramond and Chêne consider them presumptive evidence of cholecystitis.

Fissure of Sternum.—Barillet's patient, a man aged 29, presented the rare malformation of congenital fissure of the sternum. In the roentgenogram were seen two bones replacing the manubrium and with a space 55 mm. wide between them. These bones may be termed "hemisterna," each articulating with the corresponding clavicle. The bases of the bones were joined, closing the fissure by a notch. No other malformation of the skeleton was evident. The defect may originate in the fifth or sixth month of embryonic development when the cartilaginous elements of the sternum make their appearance. The case illustrates both the multiplicity of the mesosternal segments and the independence of the symmetrical halves of certain segments. The latter is a purely simian characteristic as determined in certain primates by Flower.

37: 909-924 (July 13) 1929

*Diffuse Pneumococcus Peritonitis in Children. P. Mathieu and J. Davioud.—p. 909.
*Neuralgia of Arm During Menopause. André-Thomas.—p. 919.

Diffuse Pneumococcus Peritonitis in Children.—Diffuse peritonitis caused by pneumococci is often mistaken for acute appendicitis. Mathieu and Davioud report twelve cases, all in girls. Reports in the literature also show a predominance of girls. All the patients presented symptoms of acute appendicitis, but they had a more severe diarrhea than occurs in appendicitis. Pulmonary symptoms were rare, but sore throat was a common occurrence as a precursor of the abdominal symptoms; this, however, is also to be found in appendicitis and is not of value in the differential diagnosis. Mathieu and Davioud advocate expectant treatment, though in all doubtful cases appendectomy should be performed. It would appear preferable in such a case to avoid general anesthesia and reduce to a minimum intra-abdominal operations. The disease may be diagnosed from the nature of the pus and the false membrane sometimes covering the appendix, and later may be confirmed by blood culture. The pus is without odor and contains small fibrinous masses. The loops of the small intestine are often congested. In the treatment, drainage of the abdominal cavity and antipneumococcic vaccine are indicated.

Neuralgia of Arm During Menopause.—André-Thomas describes two patients. The first, a woman, aged 42, presented a picture of acroparesthesia localized in the right arm. Cervical ribs were absent and the transverse processes of the vertebrae were not overdeveloped. The only outward sign was a slight swelling, comparable to that in myxedema. Periods of amenorrhea and endocrine disturbances are recognized by André-Thomas as the cause of this condition. In a second patient, in her thirties, neuralgic symptoms became evident several months after total hysterectomy, necessitated by the presence of an ovarian cyst. Here, again, a slight swelling of the arm was evident, particularly in the evening. The pain was indefinite, extending over the entire left side, the skin of the arm being especially sensitive. The thyroid was slightly enlarged. Organotherapy improved the condition of both patients.

37: 941-956 (July 20) 1929

*Artificial Pneumothorax: Displacement of Wall of Thorax During Injection of Air. J. Génévrier and H. Descomps.—p. 941.
Antitoxic Action of Mineral Water: Rôle of Calcium. P. L. Violle and A. Giberton.—p. 943.

Artificial Pneumothorax: Displacement of Wall of Thorax During Injection of Air.—Génévrier and Descomps consider artificial pneumothorax from the mechanical point of view. They maintain that an increase in the volume of the pleural cavity is not always equivalent to an increase in the collapse of the lung. The mediastinum is displaced toward the healthy lung and is generally followed by the hilum of the lung; this results in an apparent enlargement of the pleural cavity on the side of the collapsed lung. At the same time the thoracic wall on that side stretches eccentrically. In order to determine the amount of the collapse, orthodiagraphic examinations should be made before and after the injection of the air and at the same phase of respiration.

Progrès Médical, Paris

44: 1190-1228 (July 13) 1929

*Globulinemia in Crisis in Pneumonia. M. Loeper, J. de Sèze and Lebert.—p. 1197.
Parallelism in Development of Nervous System and Dentition. G. Variot.—p. 1197.
Occupational Poisoning with Carbon Tetrachloride. P. Boveri.—p. 1198.
Neurosis of Anxiety, Congestion of Prostate and Gastro-Intestinal Disturbance. C. Tournier.—p. 1201.
Treatment of Acute Delirium and Delirium Tremens. H. Damaye.—p. 1202.

Globulinemia in Crisis in Pneumonia.—Loeper et al. determined the globulin content of the blood serum during the crisis in eight cases of pneumonia. They find that the globulin content during the disease is lower than many authors state. The amount is frequently decreased during the formation of the pulmonary exudate, followed by an increase as the crisis approaches. This increase is only transient and is followed by a second decrease. The globulinemia is often accompanied by a temporary increase in the amino-acids. Both occurrences appear to be related to the cytolysis of the exudate and to its resorption. Loeper et al. believe that during the crisis in pneumonia the proteolytic power of the blood is increased and results in an increased elimination of globulin.

Schweizer Archiv f. Neurologie u. Psychiatrie, Zurich

24: 1-192, 1929

Problem of Reorganization of the International "Brain Commission." C. von Monakow.—p. 3.
Statistical Review of Insanity in Switzerland During 1926. H. Bersot.—p. 10.
*Biologic Importance of Month of Birth, with Especial Regard to Psychosis. M. Tramer.—p. 17.
Report on Study of Character (Biologic Point of View). W. Boven.—p. 25.
Clinical and Pathologic Study of Hypophysis. A. Gigon.—p. 53.
The Crisis of Psychoanalysis. C. von Monakow.—p. 75.
Morphologic, Physiologic and Psychologic Variation in Unicellular Twins, in Relation to Varicocele in One of Them. Laignel-Lavastine and Papillault.—p. 100.

Biologic Importance of Month of Birth, with Especial Regard to Psychosis.—Tramer's study of the importance of the month of conception and of birth in relation to the incidence of psychosis is based on observations in 3,100 patients admitted to the Rosegg Institute in the canton of Solothurn, Switzerland, in the years 1876 to 1927. This statistical study revealed that the occurrence of mental disease is lowest in persons born in May, and highest in persons born in December.

Schweizerische medizinische Wochenschrift, Basel

59: 697-716 (July 6) 1929

*Indications and Contraindications for Treatment of Latent Syphilis. O. Naegeli.—p. 697.
Physiologic Action of Climate at High Altitudes Compared with That of Other Climates. A. Loewy.—p. 700.
Influence of Tuberculous Infection, During Period of Incubation, on Respiratory Metabolism. H. Fischer and E. Frommel.—p. 703.
Mistakes in Ambulatory Pneumothorax Treatment. Voûte.—p. 705.
Treatment of Severe Summer Diarrhea in Infants. A. Peter.—p. 707.

Indications and Contraindications for Treatment of Latent Syphilis.—Many authorities are of the opinion that antisyphilitic treatment is not advisable in cases of latent syphilis. After discussing the various factors that are cited by these authors as indications against antisyphilitic treatment, Naegeli comes to the following conclusions: In patients who have never been treated or in whom the treatment has been discontinued for a long period, therapy is advisable. If such patients do not receive proper treatment the disease may involve internal organs that so far have not been affected, or skin eruptions may occur. It is also pointed out that during these latent periods the chances for a cure are better. In instances in which a definite time of infection cannot be determined, treatment is likewise advisable. In pregnant women with syphilis, antisyphilitic treatment should be instituted immediately in order to protect the fetus. Infants, children and adults with congenital latent syphilis should also be given antisyphilitic treatment. Contraindications to antisyphilitic therapy are: serious intercurrent diseases and idiosyncrasy to antisyphilitic medicaments. In patients who are over 70 years of age, a positive serologic reaction should not be considered an indication for antisyphilitic therapy, nor should antisyphilitic treatment be resorted to in patients who have undergone intensive treatment several times and in whom a positive serologic reaction is the only indication of a syphilitic infection.

Clinica Pediatrica, Modena

11: 491-584 (June) 1929

*Acute Pericarditis in Childhood. A. Pagani-Cesa.—p. 491.
*Quantitative Determination of Silicic Acid in Blood, Cerebrospinal Fluid, Urine, Feces and Tissues: Pathologic Changes. G. Macciotta.—p. 517.
*Significance of Sudanophil Granules in Leukocytes in Infants with Nutritional Disturbances. D. Blasi.—p. 542.

Acute Pericarditis in Childhood.—Pagani-Cesa states that pericarditis is as frequent in children as it is in adults. Usually it is secondary to some other disease, as rheumatic polyarthritis, general infections and diseases of the lung and pleura. During the evolution of these diseases, the heart should be examined as a routine or acute pericarditis may not be recognized. In doubtful cases of purulent pericarditis, roentgen examination is of diagnostic value; it should always be done when pericardicentesis is considered because aspiration of the exudate may be a life-saving measure. Pericardiotomy should be reserved for cases of purulent pericarditis in which the pus cannot be aspirated by puncture and good drainage is needed. It is a serious operation, however; recovery is rare and even if it does occur, adhesions usually develop.

Quantitative Determination of Silicic Acid in Blood, Cerebrospinal Fluid, Urine, Feces and Tissues.—Macciotta studied the changes in the silicic acid content of the blood of sixty children with toxic and nutritional disturbances, atrophy caused by avitaminosis, malaria, heredosyphilis, lung diseases (tuberculosis and nontuberculous diseases), tuberculous meningitis and acute anterior poliomyelitis. All but two of the patients were children aged from 2 months to 9 years. These two were mothers of two of the children. They were aged 25 and 29, respectively. The author studied the elimination of silicic acid in the urine and in the feces of the children with nutritional disturbances, in the cerebrospinal fluid of patients with diseases of the nervous system, and also in fresh tissues from three children who died from pulmonary tuberculosis. The silicic acid in the blood, and the elimination of silicic acid in the urine and the feces of patients with toxemia, serious gastroenteritis or atrophy caused by avitaminosis, increased during the active stage of the disease, and then fell below the normal level. The silicic acid content of the blood and sometimes of the cerebrospinal fluid of patients with malaria was increased. Either the silicic acid content of the cerebrospinal fluid of children with heredosyphilis was normal or there was a slight modification in it. In the blood of infants with bronchopulmonary processes, the amount of silicic acid was decreased, whereas in infants with pulmonary tuberculosis it was increased; in most of the tissues of the body there was a normal amount of silicic acid but in the nervous tissue there was a lessened amount. The silicic acid in the blood of patients with either tuberculous meningitis or acute anterior poliomyelitis was also lessened in amount.

Significance of Sudanophil Granules in Leukocytes in Infants with Nutritional Disturbances.—Blasi analyzed the blood of twenty-five infants, aged from 20 days to 13 months, convalescing from serious disturbances of nutrition and, for comparison, the blood of healthy children. In the blood of the convalescent children, in which Cesaris-Demel's stain was used, he found leukocytes that contained small and medium sized

sudanophil granules and that also showed changes in the nucleus. The number of these granules was proportional to the degree of toxicity of the disturbance. They increased during the crisis of the diseases, decreased with the improvement of the patient, and were very few at recovery. If the toxic processes are complicated by a suppurative focus somewhere in the body, the sudanophil granules in the leukocytes are larger and the changes in the nucleus are more marked. On the other hand, in the blood of healthy children sudanophil granules are rare. The author regards their presence of diagnostic value.

Deutsches Archiv für klinische Medizin, Leipzig

164: 129-256 (June) 1929

Diagnosis of Diseases of Liver and Bile Ducts. A. Adler and B. zu Jeddeloh.—p. 129.
Pathogenesis of Idiopathic Dilatation of Esophagus. C. Tamiya.—p. 147.
*Decreased Secretion of Hydrochloric Acid by Stomach in Diabetes Mellitus. E. Wiechmann and J. Elzas.—p. 163.
Appearance of Sugar in Urine Following Injections of Insulin. E. Wiechmann.—p. 172.
*Increased Incidence of Thrombosis During Past Two Years. B. Singer.—p. 175.
*Clinical Significance of Enterococci in Gastro-Intestinal Canal. M. Gundel and F. Seeber.—p. 190.
Specific Dynamic Action of Carbohydrates. H. Baur.—p. 202.
Formation of Bilirubin in Vitro. A. von Czike.—p. 236.
Mechanical Grinding of Food in Digestive Canal in Man. W. Heupke.—p. 243.

Decreased Secretion of Hydrochloric Acid by Stomach in Diabetes Mellitus.—Wiechmann and Elzas, using the method of fractional examination described by Katsch and Kalk, studied the acidity of the gastric juice in twenty-five patients with diabetes mellitus. They found anacidity eight times (32 per cent), subacidity twice (8 per cent), normal acidity thirteen times (52 per cent) and hyperacidity twice (8 per cent). Although the frequency of subacidity and anacidity is striking (40 per cent), the authors found that there was no relation between the appearance of subacidity and anacidity and the severity of the diabetes mellitus or acidosis.

Increased Incidence of Thrombosis During Past Few Years.—According to Singer, the number of cases of thrombosis at the medical clinic of the University of Leipzig during the years 1926 to 1928 was two and a half times the number observed during the years preceding the World War. Most of the thromboses occurred in patients aged from 50 to 80 and there were more cases of the condition in women than in men. The veins of the lower half of the body were the ones most frequently involved. A marked increase in the incidence of thrombosis was not observed in diseases of the heart and blood vessels. The author does not believe that the increased incidence of thrombosis is caused by the increased use of intravenous injections.

Clinical Significance of Enterococci in Gastro-Intestinal Canal.—Gundel and Seeber examined bacteriologically the gastric juice, the duodenal juice and the bile of 122 patients. They state that enterococci are variants of the lactic acid streptococcus. They occur in the gastro-intestinal canal in two chief forms. Type B enterococcus is relatively stabile but type A is not. In disturbances in the secretion of gastric and intestinal juices, enterococci can frequently be demonstrated in the stomach and in the duodenum. In rare cases they play a rôle in the development of diseases of the gallbladder. The authors are convinced that in a number of their cases of chronic enteritis, an enterococcus was the causal micro-organism. In four cases they cultivated enterococci from the blood as the sole cause of sepsis.

Deutsche medizinische Wochenschrift, Berlin

55: 1117-1158 (July 5) 1929

Results of Active Immunization Against Diphtheria. E. Seligmann.—p. 1117.
The General Practitioner and Operative Obstetrics. G. Winter.—p. 1120.
C'cn.
Significance of Protein Relation in Examination of Cerebrospinal Fluid. V. Kafka and K. Samson.—p. 1122.
Changes in Blood in Sepsis, Chloroma and Lymphosarcoma. H. Quincke.—p. 1124.
*Treatment of Bronchial Asthma by the General Practitioner. M. Leffkowitz.—p. 1126.
*Relation Between Diabetes Mellitus and Various Forms of Lithiasis. B. Molnár.—p. 1127.
Behavior of Blood Sugar During Administration of Morphine. A. Hirsch.—p. 1129.
Diagnosis of Synovial Osteochondromatosis. F. Bunne.—p. 1130.
Treatment of Acute Eczema with Red and Blue Light. K. Kirschmann.—p. 1131.
Acute and Chronic Rickets. H. Vollmer.—p. 1132.
Experimental Transmission of a Local Hypersensibility from One Paired Organ to the Other: Genesis of Sympathetic Ophthalmia. Marchesani.—p. 1133.
Idem. W. Riehm.—p. 1134.
Neglect of Examination for Hyperalgesia of Skin of Abdomen as Cause of Diagnostic and Therapeutic Errors. I. Boas.—p. 1134.
Intestinal Perforations Caused by Swallowed Fish Bones. J. Fürstenau.—p. 1135.
Fatal Hemorrhage from Traction Diverticulum of Esophagus and from Both Perforated Principal Bronchi. J. Heine.—p. 1135.

Treatment of Bronchial Asthma by the General Practitioner.—Leffkowitz states that the diagnosis and treatment of bronchial asthma should be left to the general practitioner. The latter's advantage over the specialist is his knowledge of the patient's environment, and also the possibility of longer observation. This is advantageous not only for the patient but also for scientific investigations on the problem of asthma. The author reports experiences in the diagnosis and treatment of asthma in a hospital in Berlin.

Relation Between Diabetes Mellitus and Various Forms of Lithiasis.—In order to determine the relation between diabetes mellitus and the various forms of lithiasis, Molnár studied the simultaneous occurrence of these diseases among the patients at Karlsbad. The material under observation included 323 patients with diabetes mellitus, 949 with gallstones and 170 with nephrolithiasis. He found that 22.3 per cent of the diabetic patients were affected with cholelithiasis whereas 7.74 per cent of the diabetic persons had renal calculi. However, the concurrence of diabetes with urolithiasis is relatively more frequent than the combination of diabetes with cholelithiasis. Among the 949 patients with gallstones were seventy-two, or 7.58 per cent, with diabetes mellitus. Among 170 patients with renal calculi were twenty-five, or 14.5 per cent, with diabetes. The relation between these diseases is often heredofamilial. In many instances a familial alternation can be detected. The patients suffer from some form of lithiasis and the children from diabetes mellitus, or the order may be reversed. Diabetes as well as the formation of calculi often follows infectious diseases, particularly typhoid. In many instances either a disturbance or a cessation in the activity of the generative glands precedes the development of these diseases. Achylia gastrica often occurs simultaneously. All these conditions indicate a hypercholesterolemia.

Deutsche Zeitschrift für Chirurgie, Leipzig

217: 1-160 (June) 1929

*Formation of Bone in Transplanted Connective Tissue: Metaplasia. E. Lexer.—p. 1.
*Metaplastic Bone Formation: Histologic and Experimental Study. W. Schulze.—p. 33.
*Id.: Growth Determinants. H. von Seemen.—p. 60.
*Homoplastic Transplantation of Knee Joints. H. Bürkle-de la Camp.—p. 109.
Osteodystrophia Fibrosa. W. Hoffmeister.—p. 123.

Formation of Bone in Transplanted Connective Tissue: Metaplasia.—The incentive to bone formation is given by inherent forces in the tissue. Lexer distinguishes two types of growth. He considers osteoblasts of the periosteum and marrow endosteum as responsible agents. If growth occurs in bone transplants from connective tissue certain other factors may be responsible (partly preexisting cells or an abnormal predisposition of the tissue for regeneration). Ossification of calcified tissue is an entirely different matter. Here, bone formation is of metaplastic origin and can take place in any part of the body. Biochemical factors that are not yet determined modify the paraplasm. Various combinations of these types of regeneration are possible.

Metaplastic Bone Formation.—The problem of metaplastic bone formation was studied by Schulze clinically and experimentally. The results speak against the formation of bone from already differentiated connective tissue; only specific tissue possesses osteogenic power. This specific tissue in the human body may be young connective tissue or tissue originating from the periosteum. The process of metaplastic bone formation is similar to the two types of embryonic bone development. Heterotopic metaplastic bone formation is usually direct and originates around young blood vessels or marrow fibers

that have grown into necrobiotic tissue containing calcium. This is another argument in favor of the importance of Lexer's so-called fracture hyperemia in the formation of a hard callus.

Metaplastic Bone Formation: Growth Determinants.—That bone formation from connective tissue is based on histiocytic irritation is the conclusion drawn by von Seemen as the result of his experiments and of clinical study. Deposition of calcium alone is not sufficient to initiate bone formation. The action of muscular ferments such as phosphatase is of importance. The study of eight clinical cases revealed that indirect metaplasia of connective tissue into cartilage and bone had taken place.

Homoplastic Transplantation of Knee Joints: Two Cases.—Two cases of homoplastic transplantation of a knee joint came under Bürkle-de la Camp's observation. The first patient died fourteen years after the operation from pulmonary tuberculosis, thus enabling a study of the knee joint to be made. When she was 20 her right knee joint became stiff following severe inflammation with destruction of the extensor muscles. Lexer implanted a knee joint taken from an amputated leg. After healing of the wound motion was possible. Two years after the transplantation the knee presented changes, though motion up to 90 degrees was retained. Four years later the patient wore a support, as the muscles had not regained their strength; independent motion of the joint was, however, retained although the roentgenogram revealed extensive changes. Examination showed that, throughout, the joint cavity was retained. The articular surfaces of the tibia and femur were covered with a cartilaginous substance. A bony mass representing the patella lay in front of the joint. Necrotic tissue was nowhere evident. The second case was similar. An implant of a knee joint was made in a woman, aged 34, whose knee had stiffened in the position of flexion following suppuration of the joint. Again two years following the operation certain changes were evident. The condition of the knee became gradually worse and seven years following the implant parts of the femur and tibia were sawed off. The operative specimens did not present signs of necrosis and the joint cavity was maintained.

Jahrbuch für Kinderheilkunde, Berlin

124: 127-244 (June) 1929

*Treatment of Pylorospasm by Means of Dilation of Pylorus. C. Foramitti.—p. 127.
*Fever Convulsions in Children. E. Faerber.—p. 148.
Decreased Sugar Content of Cerebrospinal Fluid in Tuberculous Meningitis. J. Geldrich.—p. 159.
*Inorganic Phosphorus Content of Cerebrospinal Fluid in Meningitis, Brain Tumor and Acute Encephalitis. B. Steiner.—p. 188.
*Differential Diagnosis Between Feer's Disease and Miliary Fever. T. Zechlin.—p. 195.

Operative Treatment of Pylorospasm by Means of Dilation of Pylorus.—Foramitti states that he first performed surgical dilation of the pylorus on an infant, aged 10 weeks, who had weighed 3.5 Kg. (7.7 pounds) at birth and who, as the result of vomiting, had lost 1 Kg. (2.2 pounds). The abdomen was opened by means of a small incision above the umbilicus and the pylorus was found to be enlarged to the thickness of a finger and to be pale and of the consistency of cartilage. The lumen of the pylorus was so narrow and the muscle tumor was so hard that it was impossible to dilate the lumen from the outside. The stomach was therefore opened three fingerbreadths orad from the pylorus and in the middle of its anterior wall by means of a longitudinal incision scarcely 1 cm. in length. Through this incision slightly curved forceps were introduced, forced through the pylorus and slowly opened, stretching the pylorus. The pyloric ring was then further stretched with Hegar dilators up to a number 15 dilator. The small gastrostomy wound was closed in three layers (the mucosa and seromuscularis with fine catgut and the serosa with fine silk). The author states that there is very little danger of peritoneal infection in this operation. From the study of eighteen cases of pyloric stenosis in which he used this method of surgical dilation of the pylorus, Foramitti concludes that there are two forms of spastic pyloric stenosis. In the first form the pylorus is greatly enlarged and is pale and as hard as cartilage; even the muscle of the prepyloric part of the stomach is greatly thickened. In the second form the pylorus is markedly contracted and harder than in the first form; the prepyloric portion of the stomach in this form is less hypertrophic and the stomach is more dilated. In the second form it appears that a purely spastic stenosis has been converted into a more organic one. In this group the stomach is distended with air; when the anterior wall of the stomach is incised the air escapes and the stomach collapses. In the first form, on the contrary, the stomach is contracted and active peristaltic movements begin in it after the operation. In the first group of cases one can stretch the pylorus with ease but in the second group one encounters marked resistance and occasionally may tear the serosa over the stretched pylorus. Such tears in the serosa are closed with sutures and do not decrease the efficacy of the operation. When this accident occurs the resulting condition resembles the one produced by the Rammstedt operation, except for the fact that it is complicated by an opening in the stomach. As a rule, however, only the serosa is torn and the wound does not extend to the mucosa. Such tears occur on both the anterior and the posterior walls of the pylorus and both these regions should be carefully examined for them after the dilation of the pylorus. In the author's eighteen cases, tears in the serosa occurred nine times. Nevertheless, sixteen of the infants recovered and postmortem examination of the two that died demonstrated that death had not been caused by the operation.

Significance of Fever Convulsions in Children.—Faerber believes that, with the exception of the fever, fever convulsions closely resemble the convulsions in epilepsy. Most of the children with fever convulsions whom he observed came from families in which convulsions of all kinds, including epileptic convulsions, had occurred. Two of the ten children with fever convulsions developed true epilepsy. On the basis of observations made on these patients, the author divides cases of fever convulsions into two groups. In the first group are placed the children whose subsequent development is normal. In the second group are placed the children in whom the fever convulsions are closely related to epilepsy and who later develop epilepsy. The author believes that in these cases it is more logical to consider the fever convulsions true epileptic convulsions than it is to consider them fever convulsions in epileptic patients. In both groups a long period of observation is necessary before one can arrive at a decision as to the nature of the convulsions that occur during febrile conditions because the two types of convulsions cannot be differentiated. In some cases there is a long interval between the occurrence of convulsions during a febrile condition and the appearance of epilepsy.

Inorganic Phosphorus Content of Cerebrospinal Fluid in Meningitis, Brain Tumor and Acute Encephalitis.—According to Steiner the inorganic phosphorus content of the cerebrospinal fluid in healthy persons varies between 1.4 and 1.6 mg. per hundred cubic centimeters. In meningitis it varies from 1.7 to 3 mg. per hundred cubic centimeters and this fact is of value in the differential diagnosis of doubtful cases. In brain tumor and acute encephalitis the inorganic phosphorus content of the cerebrospinal fluid is decreased; this fact is of great significance because in these conditions other chemical tests may give completely negative results.

Differential Diagnosis Between Feer's Disease and Miliary Fever.—According to Zechlin the resemblance between Feer's disease and miliary fever is so great that the differential diagnosis between the two conditions can be made only on the basis of bacteriologic examination.

Klinische Wochenschrift, Berlin

8: 1201-1240 (June 25) 1929

Microscopic Study of Pathologic Changes in Gout. G. Pommer.—p. 1201.
Immunity Processes in Syphilis: III. Stock Specific Fixation of Complement and Antibodies. H. Kroó and F. O. Schultze.—p. 1203.
*Incipient Tuberculosis. J. Heimbeck.—p. 1206.
*Influence of Epinephrine on Volume of Circulating Blood. K. Hitzenberger and F. Tuchfeld.—p. 1208.
Anatomic Changes in Brain in Epilepsy Due to Lead. M. Staemmler.—p. 1210.
*Acute Pancreatogenic Steatorrhea as Complication of Chronic Colitis. T. E. Hess Thaysen.—p. 1212.
Behavior of Esters of Cholesterol in Blood Serum of Patients with Diseases of Liver. H. Wendt.—p. 1215.
Biology and Staining of Spirochaeta Pallida. S. Bergel.—p. 1218.
*Blood Sugar Curve in Patients Undergoing Forced Alimentation or Reducing Cures at High Altitudes. J. von Deschwanden.—p. 1220.
*Electrolytic Content of Blood Serum in Diseases of Heart and Vessels. J. Teploff and A. Koschewnikowa.—p. 1222.

Incipient Tuberculosis.—Heimbeck reports observations on 581 student nurses. At the beginning of their training they were subjected to the Pirquet test, and 52 per cent gave a negative reaction. After a period of three years nearly all of them gave a positive reaction. Twenty-two per cent of those who in the beginning gave a negative reaction contracted tuberculosis, whereas of those who at the time of entering gave a positive reaction, only from 1 to 2 per cent developed tuberculosis. On the basis of these observations the author concludes that if those who gave a negative Pirquet reaction in the beginning contracted tuberculosis only in rare instances, it is not probable that the latent infection of childhood is the cause of the infection during youth. On the other hand, he reasons that if most of the individuals with a negative Pirquet reaction subsequently give a positive reaction and a large percentage of these actually contract tuberculosis, an exogenous new infection must be the cause of the disease. In order to study the new infiltrate occurring in persons about 21 years of age, the author made careful observations on nine of these nurses. He thinks that tuberculosis during youth is generally due to a new infection. It becomes localized in the lungs and often forms primary infiltrates. A common form is the early subclavicular infiltrate. Frequently it manifests itself as an erythema nodosum or a pleuritis.

Influence of Epinephrine on Volume of Circulating Blood.—Hitzenberger and Tuchfeld describe a method for the determination of the volume of the circulating blood. The tests were made on healthy persons and on patients. They were given an injection of epinephrine, and after that the amount of the circulating blood was determined at different intervals. The authors employed the carbon monoxide method according to van Slyke and O'Neill. It was found that an increase in the volume of blood occurs in about 50 per cent of normal persons. In patients with atrophic cirrhosis of the liver, epinephrine injections do not cause an increase in the quantity of the circulating blood. However, in persons with polycythemia or with myelocytic leukemia, epinephrine injections cause a considerable increase in the volume of the circulating blood.

Acute Pancreatogenic Steatorrhea as Complication of Chronic Colitis.—Hess Thaysen reports three cases of acute pancreatogenic steatorrhea. The condition was characterized by sudden pains in the abdomen which radiated toward the back, by vomiting and slightly increased temperatures and by steatorrhea. In two instances the diabetic type of alimentary glycosuria and increased diastase in the urine became noticeable. The acute pancreatogenic steatorrhea occurred in two cases as a complication of chronic colitis, and in one instance it developed following an acute duodenal catarrh. Previous to this attack the patients had never had either gastric or duodenal ulcer or cholelithiasis. The attacks of steatorrhea were never complicated by icterus and always subsided quickly. The pains, steatorrhea and increased temperature always disappeared in the course of a few days. The acute pancreatogenic steatorrhea can be traced to a mild form of pancreatitis that is designated as "acute benign pancreatitis." The latter may occur without simultaneous steatorrhea. In that case it appears with sudden pains in the abdomen and temporary glycosuria. In patients with gastric or intestinal ailments, this disease may explain the sudden attacks of pain of unknown origin. The condition is dangerous, because it may lead to chronic pancreatitis with diabetes. For the treatment of acute pancreatic steatorrhea, the author advises complete rest, applications on the abdomen and eventually opiates. In the beginning the patient should receive only small amounts of raw milk. The quantities may be increased gradually and later a protective diet is advisable.

Blood Sugar Curve in Patients Undergoing Forced Alimentation or Reducing Cures at High Altitudes.—Von Deschwanden describes two youths, aged 18, one of whom was obese and the other emaciated and asthenic. During a sojourn in high mountains, the one with adiposity lost in weight, whereas the asthenic person gained a number of pounds. The author examined the sugar content of the blood in both patients. He found that in the corpulent person the climate at a high altitude effects a counter regulation of the blood sugar, but without causing an essentially better function of the islands of Langerhans or reducing the functions of this organ. If, under the influence of the high altitude, the asthenic person gains weight, this counter regulation is reduced and the functioning of the islands of Langerhans is improved. This causes hypoglycemia, with its typical effects on the metabolism. The most important factor of the climate of high mountains is the sunshine. However, because the radiation at high altitudes is stronger than at low altitudes, the good effects becomes evident, to a certain degree, following a sojourn in high mountains without direct exposure to the sun. Moreover, direct solar irradiation increases the good effects. The author concludes that: 1. The climate at high altitudes, and particularly exposure to the sun's rays, causes in obese persons an improvement in the counter regulation of the blood sugar and by this effects loss of weight. 2. In asthenic persons this counter regulation is reduced, the functioning of the islands of Langerhans is improved and an increase in weight is the result.

Electrolytic Content of Blood Serum in Diseases of Heart and Blood Vessels.—In order to determine the electrolytic content of the blood serum in diseases of the heart and vessels, Teploff and Koschewnikowa examined fifty-seven patients with various cardiac and circulatory disturbances. In all of them they determined the calcium content of the blood serum and in most of them they also determined the potassium content; in twelve cases they determined the potassium and calcium cations and the chlorine and inorganic phosphorus anions. The results of their tests are summed up as follows: 1. In diseases of the heart or of the blood vessels, without circulatory insufficiency, the calcium content was usually normal. The potassium content was likewise normal in most instances. In several cases it was somewhat increased, but the ratio of potassium and calcium was normal in nearly all instances. 2. During compensatory disturbances of the heart, the calcium, chlorine and inorganic phosphorus contents were reduced in most cases. However, the potassium content was usually normal. 3. In cardiac insufficiency, particularly in cardiosclerosis, the ratio of potassium and calcium deviated from the normal in most instances.

Medizinische Klinik, Berlin

25: 1049-1086 (July 5) 1929

Pathologic and Roentgen Changes in Tuberculosis of Bronchial Lymph Nodes. St. Engel.—p. 1049.
Coagulation of Blood and Its Relation to Complement. M. F. von Falkenhausen.—p. 1058.
*Treatment of Chorea Minor with Intravenous Injections of Neoarsphenamine. J. von Bókay.—p. 1060.
*Treatment of Laryngeal Tuberculosis. G. Wotzilka.—p. 1061.
*Thrombosis of Renal Vein Following Enteritis. H. Spaeth.—p. 1064.
Fatal Complications After Recovery from Diabetic Coma. H. Bix and E. Czyhlarz.—p. 1065.
Cerebral Symptoms in Early Familial Spastic Paralysis in Child. Fillié.—p. 1066.
Variations in Composition of Gastric Juice Following Suggestion of Different Foods. Outeiriño and Jaso.—p. 1067.

Treatment of Chorea Minor with Intravenous Injections of Neoarsphenamine.—Children with chorea minor were treated by von Bókay with intravenous injections of neoarsphenamine. He reports fifty cases in which he employed neoarsphenamine exclusively. The ages of the patients ranged between 5 and 16 years. The total quantity of neoarsphenamine administered during the entire treatment varied between 0.6 and 3.2 Gm. From 0.1 to 0.3 Gm. was given each time, and the intervals between injections were from five to seven days. Gastro-intestinal disturbances did not appear. However, in two instances a mild exanthem developed and in one case a zoster eruption was noted. The author asserts that intravenous injections of neoarsphenamine shorten the duration of the therapy considerably. In from three to six weeks nearly all the patients had completely recovered. In only eight cases did this therapy require from seven to thirteen weeks. Cardiac disturbances do not contraindicate this treatment. The author asserts that the earlier the neoarsphenamine injections are begun, the better are the prospects of a quick recovery. However, the occurrence of relapses cannot be entirely prevented. Neoarsphenamine has not a metabolic but a chemical action. The changes in the metabolism are of minor significance.

Treatment of Laryngeal Tuberculosis.—According to Wotzilka a correct and early diagnosis is an absolute necessity for the effective treatment of laryngeal tuberculosis. He states

that laryngoscopic examinations should be made on every patient with pulmonary tuberculosis, at regular intervals of from four to six weeks. If redness and swellings are seen, they should be considered signs of beginning tuberculosis and control examinations should be made every two weeks. Refraining from speaking and irradiation with sunlight or mercury light often cause minor changes to disappear. If the tuberculous process is more advanced, if infiltrations, ulcerations and perichondritis exist, systematic treatment becomes necessary. In deciding on a certain method of treatment, one must remember that patients with laryngeal tuberculosis generally suffer likewise from pulmonary tuberculosis. The best conditions for treatment are offered in an institution for tuberculous patients. Here the laryngologist can work in cooperation with the specialist on pulmonary tuberculosis. It is advisable to start an intensive local treatment for laryngeal tuberculosis only if the pulmonary process is not too progressive, if the temperature is nearly normal, if the patient is not losing weight and if the blood formula does not show a marked deviation toward the left. Medication with tuberculin or with gold preparations often improves the general condition. However, it does not have a direct influence on the tuberculous process. In cases of infiltrations and ulcerations the author employs a galvanocautery. Not too much should be attempted at once, and the intervals between the treatments should be at least three weeks. With the necessary precautions the dangerous laryngeal edema is avoided. If it becomes necessary to employ the curet for the removal of cone shaped or papilloma-like infiltrations, it is advisable to prepare for this procedure by treatment with the galvanocautery. Concerning light therapy, the author states that it gives favorable results, especially if it is employed in combination with the galvanocautery. One of the most important factors in the treatment of laryngeal tuberculosis is to counteract the pain in swallowing. In less severe cases tablets containing butamin may be given. In other instances perineural alcohol injections of the superior laryngeal nerve, or roentgen irradiations, may be helpful. Concerning the prognosis, the author states that it is favorable in those cases in which the general condition of the patient permits surgical therapy. He thinks that ambulatory treatment does not give the same good results as institutional treatment, and he recommends the latter for all patients with laryngeal tuberculosis.

Thrombosis of Renal Vein Following Enteritis.—Spaeth asserts that thrombosis of the renal vein occurs seldom, and because no typical symptoms are known, it is almost never recognized. He reports the case of a man, aged 26, who, after an indiscretion in eating, had an attack of severe pain. Two days later he developed acute enteritis. The day following, a serious circulatory disturbance became manifest. The patient was cyanotic and his pulse was very weak. The voiding of urine had ceased shortly after the beginning of the illness. On the following days, catheterization yielded minimal quantities of bloody urine. The patient's condition grew steadily worse, and several days later he died. Postmortem examination revealed thrombosis of the right renal vein and of its larger branches. The thrombosis extended into the inferior vena cava. Hemorrhagic gastritis, and swelling of the intestinal mucous membrane and of the mesenteric lymph nodes, were likewise noted. The author assumes that the enteritis was the primary disturbance. Then a toxic anuresis developed. This was followed by an infection of the pelvis of the right kidney, which in turn caused a phlebitis of the renal vein. From there the thrombosis spread to the inferior vena cava and finally gave rise to numerous pulmonary emboli. In comparing this case with similar cases in the literature, the author found that most of them are characterized by pyelitis with a simultaneous enteritis. He therefore concludes that whenever circulatory disturbances and severe oliguresis develop after enteritis, the possibility of a thrombosis of the renal vein should not be overlooked.

Monatsschrift f. Geburtshülfe u. Gynäkologie, Berlin

82: 157-258 (June) 1929

*Hyperplasia of Basal Layer of Endometrium. W. Lahm.—p. 157.
*Secondary Sarcoma of Uterus Following Long Latent Period. B. Steinhardt.—p. 168.
*Artificial Formation of Vagina According to Popoff's Method. W. I. Sdrawomyslow.—p. 182.
*Intra-Uterine Injections in Diseases of Uterus and Uterine Adnexa. N. A. Mussatow.—p. 204.
Mortality in Prolapse of Umbilical Cord. E. Brandis.—p. 208.

Significance of Hyperplasia of Basal Layer of Endometrium.—Lahm presents evidence in support of his contention that hyperplasia of the endometrium, despite its occasional occurrence in young women, is a physiologic senile change.

Secondary Sarcoma of Uterus Following Long Latent Period.—Steinhardt reports a case of primary sarcoma of the cervical lymph nodes and secondary sarcoma of the uterus, in which the interval between the appearance of the primary and the secondary growths was seventeen years.

Artificial Formation of Vagina According to Popoff's Method.—Sdrawomyslow gives the technic of Popoff's method for the artificial formation of a vagina from a portion of the rectum and discusses five cases in which this operation was performed. Of the five patients, one could not be traced, two died as a result of the operation and two were able to lead a normal sexual life.

Value of Intra-Uterine Injections in Diseases of Uterus and Uterine Adnexa.—Mussatow contends that most women with ascending gonorrhea may be cured without operation. Patients with endometritis, metritis, adnexitis, periadnexitis and localized peritonitis are suitable for injection treatment. He also maintains that women with uterine hemorrhages not caused by malignant tumors, and some women with sterility, may be cured without operation. He has even used with success intra-uterine injections in the treatment of several types of fibromyoma of the uterus, accompanied by hemorrhage. In the treatment of chronic hemorrhagic metropathy by means of intra-uterine injections of iodine, he obtained the following results: (1) in fifteen cases of chronic hemorrhagic metropathy following childbirth, no report in seven cases, insufficient treatment in one case and recovery in seven cases; (2) in eighteen cases of chronic hemorrhagic metropathy following abortion, no report in three cases and recovery in fifteen cases; (3) in thirteen cases of preclimacteric hemorrhagic metropathy, recovery in thirteen cases; (4) in twenty-four cases of functional hemorrhagic metropathy, recovery in twenty-four cases.

Wiener klinische Wochenschrift, Vienna

42: 893-924 (July 4) 1929

Relation Between Diagnosis and Effective Therapy. M. Sihle.—p. 893. C'td.
*Biologic Action of Irradiated Chocolate. O. Ried.—p. 896.
*Therapeutic Experiments with Irradiated Chocolate. H. Krasso.—p. 898.
*Action of Atropine in Extrasystole. L. S. Fogelson.—p. 899.
*Clinical Significance of Disturbances of Liver in Typhus. B. Coglievina.—p. 900.
Loose Bodies in Knee Joint. M. Jerusalem.—p. 903.
*Recurrence of Ulcer Following Extensive Resection of Stomach: Choice of After-Operation Following Resection According to Billroth I. F. Starlinger.—p. 905.
Clinical Aspects of Painful Abdominal Disturbances. F. Kovács.—p. 907.
American Medical Conventions as Seen by a European. B. Breitner.—p. 910.
Indications for Conservative Treatment and Operation in Suppurations of Sinuses. E. Glas.—p. 912.

Biologic Action of Irradiated Chocolate.—Ried reports experiments with irradiated chocolate. Difficulties were encountered at first, because the irradiation gave the chocolate a somewhat burnt taste. However, this objectionable feature was soon remedied. In order to determine the biologic action of irradiated chocolate, experiments were made on growing rats. It was found that animals which had been fed with irradiated chocolate showed a greater increase in weight than the control animals, which had been fed with ordinary chocolate. In rats which in addition to the chocolate were given an iron preparation, the growth was retarded. However, entirely different results were observed when the iron was added to the chocolate before the irradiation. Animals that were given chocolate to which iron had been added before the irradiation gained more weight than those that were fed irradiated chocolate without iron. The author asserts that harmful effects of irradiated chocolate, as hypervitaminosis, never became manifest. The rats remained healthy and at necropsy pathologic changes were not found in any of their organs.

Therapeutic Experiments with Irradiated Chocolate.—Krasso describes experiments with irradiated chocolate on

patients with various ailments. They were given daily 50 Gm. of irradiated milk chocolate and two cups of hot chocolate. The latter was prepared by adding to hot milk from 1 to 3 teaspoonfuls of powdered irradiated chocolate. In order to prevent the destruction of valuable substances, the chocolate was not boiled. The patients were not aware that they received a special chocolate. However, many of them stated of their own accord that this chocolate had a very good taste. Nearly all the patients took it for several weeks or months without the least aversion. In many of them an increase in appetite was noted. In patients with cancerous cachexia, only a slight improvement was noted. Individuals with cachectic phthisis, however, often showed an improvement in their general condition, a gain in weight and a decrease in the toxic manifestations. Good effects were noted in patients with chronic exudative pulmonary tuberculosis and in those with fibroid phthisis. Favorable results were likewise noted in patients with multiple lymphoma and in one case of enterocolitis. Erythropoiesis may also be favorably influenced by irradiated chocolate. The author asserts that in patients with secondary anemia an increase was noted in the number of erythrocytes and in the hemoglobin. When chocolate was given to which iron had been added before the irradiation, or when the irradiated chocolate was given simultaneously with liver, the effects were even more favorable. The author suggests that irradiated chocolate might also prove valuable in the treatment of diseases of the bones, especially in osteomalacia and in rickets.

Action of Atropine in Extrasystole.—Fogelson reports the case of a man, aged 23, significant because of the effect of atropine on the extrasystole. Following an intravenous injection of 3 mg. of atropine, bigemina developed. The extrasystole appeared near the end of the diastole, following contraction of the auricle and only 0.07 of a second before the missing normal systole. The bigemina was not accompanied by a disturbance in the rhythm of the sinus or in the succession of the contractions of the auricle. During auscultation and observation, these conditions simulated a normal rhythm.

Clinical Significance of Disturbances of Liver in Typhus: Their Treatment.—Observations on patients with typhus convinced Coglievina that nearly all of them had liver trouble. Enlargement of the liver and sensibility to pressure in the right hypochondrium were noticeable. In 80 per cent of the cases urobilinuria became manifest, and in 30 per cent a light icterus developed. Three patients had a severe icterus. These three died. The author thinks that the functional disturbances of the liver are mainly responsible for the psychic disturbances, the retarded coagulation and the hemorrhagic character of the typhus. As the most effective treatment, he recommends methenamine and a colloidal silver preparation. In two cases he employed both medicaments. The author thinks that a combination treatment with methenamine and with a colloidal silver preparation may prove helpful in influencing the reticuloendothelial system.

Recurrence of Ulcer Following Extensive Resection of Stomach.—Starlinger asserts that repeated resection following an operation according to Billroth's first method is a dangerous undertaking. But in cases of a bleeding recurrent ulcer it is necessary. Exclusion by Eiselsberg's method, Finsterer's resection of a part of the stomach or terminolateral gastroduodenostomy either with or without resection of a part of the stomach seem less dangerous. However, secondary bleeding or perforation of the ulcer is still possible. The extraperitonization of the duodenal stump is a last expedient. As a safety measure it is always advisable to insert a drain down to the duodenal stump. The simple gastrojejunostomy that Balfour employs in cases of recurrent ulcer involves the danger of a peptic jejunal ulcer, and a fatal hemorrhage from the ulcer has been observed after such a procedure.

Zeitschrift f. d. ges. experimentelle Medizin, Berlin

66: 291-538 (July 9) 1929

Therapeutic Value of a Heart Hormone Obtained from Liver. H. Salomon and G. Zuelzer.—p. 291.
*Experimental Cerebral Embolism. P. N. Wesselkin.—p. 325.
*Mechanism Involved in Infection of Medulla Oblongata in Acute Diffuse Peritonitis. P. W. Manenkow.—p. 338.
*Diuretic Action of Calcium Chloride. P. J. Gorski.—p. 355.
*Function of Carotid Gland in Man. J. Jacobovici, I. I. Nitzescu and A. Pop.—p. 359.
*Retraction Power of Lung. K. von Neergaard.—p. 373.
Physiologic Action of Hypertonic Solutions of Inorganic Salts. N. Schilow, Iwan and N. Speransky.—p. 395.
Action of Calcium and Strontium Salts on Diuresis, Hydrogen Ion Concentration in Urine and Pulse Rate. I. A. Alexejew-Berkmann.—p. 408.
Excretory Function of Intestine. B. Purjesz and J. Kup.—p. 419.
Protein Reserve of Liver. W. Warasi.—p. 436.
Immunity of Liver Tissue to Infection in Experimental Sepsis. E. F. Müller and W. F. Petersen.—p. 442.
Subarachnoid Injection of Lymphatic System. I. Pigalew.—p. 454.
Excretion of Sterol and Sterol Balance in Complete Obstruction of Bile Tract. M. Bürger and W. Winterseel.—p. 459.
Disturbances in Resorption of Fats and Cholesterol in Cirrhosis of Liver. M. Bürger and W. Winterseel.—p. 463.
*Length of Intestine of Man in Vivo. C. Elze and G. Ganter.—p. 475.
Water Metabolism at High Altitudes. C. Dorno.—p. 487.
Rôle of Sympathetic Nervous System in Action of Phlorhizin. M. Mecklenburg and H. Dau.—p. 500.
Increased Peptidase Content of Blood Following Injury of Liver Cells. F. Sturm.—p. 506.
Efficiency of Muscular Work in Health and Disease. H. W. Knipping.—p. 517.
Mortality of Tadpoles in Silver Chloride Solutions of Various Dilutions. V. Vondráček.—p. 535.

Effects of Experimental Cerebral Embolism.—Wesselkin injected suspensions of lycopodium spores and soot particles in physiologic solutions of sodium chloride into the common carotid and the vertebral arteries of three dogs and thirty-seven cats. He noted that the sudden introduction of large quantities of fine emboli into the common carotid artery causes the same marked disturbances in the bulbar centers which are produced in acute cerebral anemia following ligation of the artery. The introduction of emboli into the vertebral artery produces the same effect with even a smaller quantity of emboli. The gradual introduction of a dilute suspension at first produces an isolated disturbance in the respiration; the blood pressure is not changed and only occasionally is the pulse rate slightly decreased. These results are probably caused by the more favorable anatomic conditions for the passage of emboli to the respiratory center than to the vasomotor center. The respiratory disturbance produced thereby shows the following three periods: dyspnea (inconstant); prolonged inspirations, and a series of gasps. These manifestations are not accompanied by an increase in the blood pressure. They are observed also following division of both vagus nerves.

Mechanism Involved in Infection of Medulla Oblongata in Acute Diffuse Peritonitis.—To determine the mechanism involved in infection of the medulla oblongata in acute diffuse peritonitis, Manenkow injected equal doses of staphylococci under the serosa of the stomach of a guinea-pig in which the vagus nerves were divided, and under the serosa of the stomach of a guinea-pig in which the vagus nerves were not divided. He noted that the guinea-pig with divided vagus nerves lived twice as long as the control animal and that the local inflammatory changes at the point of injection were much more marked in the latter animal. From this experiment and other similar experiments, the author concludes that infectious processes in the abdominal cavity are transmitted to the medulla oblongata through the vagus nerve.

Diuretic Action of Calcium Chloride.—Gorski studied the action of calcium chloride on the vessels of an isolated kidney of a guinea-pig. He found that weak solutions of calcium chloride produced dilatation of the vessels. He concludes that, as calcium chloride causes an increased flood of blood through the kidney, it could be used as a diuretic.

Function of Carotid Gland in Man.—Jacobovici et al. report the results of their study of the carotid gland in one patient during thyroidectomy, in one patient with dementia and in three patients with epilepsy following surgical exposure of the gland. They found that direct faradic stimulation of the exposed and isolated carotid gland in man results in reflexes that act on the heart and blood vessels. This stimulation causes regularly a depressor cardiovascular reflex. Mechanical stimulation (by finger pressure or compression with anatomic forceps) of the gland alone or of the tissue at the level of the bifurcation of the common carotid artery likewise causes a depressor reflex. Direct faradic stimulation of the carotid sinus before or after the extirpation of the gland does not have a cardiovascular effect. Mechanical stimulation of the sinus itself by finger

pressure, without pressure on the tissue at the bifurcation of the carotid, causes insignificant changes in the blood pressure, particularly following removal of the gland. The previously described carotid reflexes appear to arise from the carotid gland, which apparently is the receptor organ of the pressure stimulus originating at the bifurcation of the carotid. This reflex is therefore a carotid gland reflex rather than a carotid sinus reflex and plays a rôle in maintaining the blood pressure at a removal level. Extirpation of the carotid gland usually results in an increase in the arterial blood pressure. The authors suggest the possibility of treating various types of arterial hypotension by surgical removal of the carotid gland.

Retraction Power of Lung.—In experiments on lungs in vitro, von Neergaard found that the total retraction of the lung may be divided into two components; the more important component is the action of the surface tension in the alveoli, the less important the true tissue elasticity. According to his measurements the retraction caused by the surface tension in the alveoli is from two to three times as great as the retraction caused by the true tissue elasticity.

Length of Intestine of Man in Vivo.—Elze and Ganter present roentgen evidence refuting the contention of van der Reis and Schembra that in man the average total length of the entire alimentary tract is only 2.5 meters.

Zeitschrift für Tuberkulose, Leipzig

54: 1-96 (June) 1929

Roentgen Demonstration of Secondary Tuberculous Infiltrations in Lungs in School Children. K. Nüssel.—p. 1.
*Filtrable Virus of Tuberculosis. F. Keller and R. Wethmar.—p. 22.
Treatment of Pulmonary Tuberculosis by Percutaneous Administration of Nonspecific Lipoids. R. Gewaltig.—p. 32.
Quantitative Determination of Smallest Amount of Tuberculin That is Effective When Given Percutaneously. K. Stejskal.—p. 43.
*Spontaneous Healing of Extensive Pulmonary Lesions in Tuberculosis in an Amateur Swimmer. E. Nervegno.—p. 46.
*Development of Pulmonary Tuberculosis Following Traumatic Injuries of Thorax. N. Gegetchkori and I. Gigineischwili.—p. 49.

Filtrable Virus of Tuberculosis.—In five out of forty experiments, Keller and Wethmar demonstrated the passage of a few tubercle bacilli through numbers L_2 and L_3 Chamberland filters. The filtrability of the tubercle bacillus is not surprising if one considers the fact that some other bacteria, as the causal micro-organism of chicken cholera, occasionally pass through hard filters. The presence of tubercle bacilli in the filtrates could not be demonstrated by cultivation but it was demonstrated by animal inoculation. In two experiments in which guinea-pigs were inoculated with the filtrate from a culture of tubercle bacilli of decreased virulence, the authors noted changes resembling those described by Calmette and Valtis. In three experiments the guinea-pigs developed typical tuberculosis. On the basis of their observations, the authors question the existence of a filtrable tuberculous virus differing from the tubercle bacillus.

Spontaneous Healing of Extensive Pulmonary Lesions in Tuberculosis in an Amateur Swimmer.—Nervegno describes a case of spontaneous healing of extensive tuberculous lesions in the lungs of a young woman who had engaged actively in swimming during the period of evolution of the pulmonary process. The healed lesions were discovered during the medical examination of the members of a women's swimming club. One of the most active members stated that two years previously she had taken care of her mother for three months preceding the mother's death from pulmonary tuberculosis. Roentgen examination of the lungs revealed extensive healed tuberculous lesions. The author emphasizes the fact that in this case the tuberculous lesions had healed with the patient exercising strenuously instead of undergoing a rest cure.

Development of Pulmonary Tuberculosis Following Traumatic Injuries of Thorax.—Gegetchkori and Gigineischwili report five cases of pulmonary tuberculosis in which the pulmonary lesions developed in apparently healthy persons shortly after a traumatic injury of the thorax. The authors believe that all the apparently healthy persons in reality had hidden latent foci of tuberculosis with living virulent baciili and that the traumatized lung constituted a favorable medium for their development.

Zentralblatt für Chirurgie, Leipzig

56: 1537-1600 (June 22) 1929

Treatment of Congenital Defect of Fibula. A. Haas.—p. 1538.
*Use of Draisine in Treatment of Congenital Dislocation of Hip. F. Schede.—p. 1541.
Fahraeus' Phenomenon: Determination of Toxicolytic Barrier in Suppurative Processes. J. H. Lukomsky.—p. 1543.
Restoration of Crucial Ligaments Following Operation for Chondromalacia and Fracture of Semilunar Cartilages. F. Mandl.—p. 1547.
Degastro-Enterostomy: Four Cases. H. Hilarowicz.—p. 1551.
Appendicitis and Trauma: Case. H. Hartoch.—p. 1555.
Relaxation of Diaphragm. F. Krauss.—p. 1558.
*End-Results of Pyloroplasty for Gastric Ulcer. X. Polissodowa.—p. 1560.
*Open or Closed Treatment of Wounds Resulting from Operations on Rectum Via Sacral Route. F. Neugebauer.—p. 1563.

Use of Draisine in Treatment of Congenital Dislocation of Hip.—Schede advises the use of a draisine in the after-treatment of congenital dislocation of the hip and various other conditions in orthopedic surgery, such as osteotomy or operation for flatfoot. The problem of motion and loading of the hip joint is the major one; forced adduction and excessive external rotation of the leg must be avoided. The draisine possesses side flaps which can be shifted, so as to cause the legs to remain in middle rotation. Its height should enable the child to touch the ground with his toes, thus propelling himself. As the child grows, he can set his entire foot on the ground and gradually rest his weight on it. With this treatment, Schede observed rapid and adequate formation of the joint cavity, even in older children. The use of the draisine should be maintained till the roentgenogram presents evidence of the formation of an adequate acetabulum.

End-Results of Pyloroplasty for Gastric Ulcer.—Polissodowa reports the results of seventeen operations for gastric ulcer performed according to Heinecke-Mikulicz's technic of pyloroplasty. This operation had not proved satisfactory and had therefore been abandoned. Polissodowa considers it superior to gastro-enterostomy in cases of high acidity. The procedure is not complicated. In case of reoperation the operative field is clearer than after gastro-enterostomy. Polissodowa's operations on thirty-one patients are reported. In eleven of these, the results after from one to six years were observed. Of five operations for ulcer of the cardia, three were successful. The prognosis in pylorospasm was more favorable, only one of seven cases not responding to the intervention.

Open or Closed Treatment of Wounds Resulting from Operations on Rectum Via Sacral Route.—The technic of aseptic treatment of wounds resulting from operations on the rectum is described by Neugebauer. Von Witzel originated the operation in 1903, obtaining 100 per cent success in seventeen patients, and later von Wenzel described a modification of this method. Neugebauer also favors closed treatment; the fundamental principle consists in converting every case of resection to one of amputation. Of Neugebauer's fifty-one patients, seven died of the operation, two from infection of the wound and five from cardiac and pulmonary complications.

Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

73: 2021-2132 (April 27) 1929

Treatment of Bone Fragility with Thymus Preparations. E. Gorter.—p. 2022.
*Diagnosis of Position of Child in Uterus. H. van der Hoeven.—p. 2030.
Bacterial Contamination of Wounds Due to Accident, Before and After Disinfection with Five Per Cent Tincture of Iodine. B. A. G. Veraart and J. B. Drenth.—p. 2033.

Diagnosis of Position of Child in Uterus.—Van der Hoeven points out that in the later months of pregnancy, it is very unpleasant for the mother to lie on the side to which the child's back is directed. Usually the mother is instructed to lie on the left side, but it is better to determine where the back of the child really is. The author always asks the mother where she has felt the most movement of late. If movement has been in the right side above the navel, the child's back is directed to the left and the child is in the head position; if to the left, below the navel, the child is in the breech position with the back to the right. If the mother, during the days just preceding the birth, has felt active movements of the child and can state just where she felt the movements, one is nearly always able to establish the position of the child by this means alone. One should, of course, note also where the child's heart sounds are heard most distinctly.

Bibliotek for Læger, Copenhagen

121: 231-279 (June) 1929

Point of Attack of Epinephrine and Other So-Called Vegetative Poisons. A. Brems.—p. 231.
*Effect of Insulin Therapy on Body Weight in Patients with Diabetes Mellitus. S. A. Holbøll.—p. 261.

Effect of Insulin Therapy on Body Weight in Patients with Diabetes Mellitus.—Of 105 patients with diabetes who were treated with insulin, 103 gained in weight, in some cases to a considerable degree. At the beginning of treatment fifty-five were underweight and seven overweight; on after-examination two were underweight and forty-four overweight. Holbøll states that the frequent complication of obesity with diabetes is due to the patients breaking away from their diet, both quantitatively and qualitatively, and urges closer attention to the weight of diabetic patients treated with insulin.

Finska Läkaresällskapets Handlingar, Helsingfors

72: 393-479 (June) 1929

*Inflammation Cells. A. Wallgren.—p. 393.
Treatment in Large Defects in Lower Extremities. B. Lönnqvist.—p. 412.
*Semon-Rosenbach's Law in Paralysis of Larynx. F. Leiri.—p. 425.
*Gastric Mucous Membrane in Aplastic Anemia. I. Wallgren.—p. 434.
Mental Disturbance and Circulatory Disorder. R. Ehrström.—p. 453.
Roentgen Diagnosis of Relaxation and Hernia of Diaphragm. B. Nyström. —p. 459.

Inflammation Cells.—Wallgren discusses free inflammation cells in man according to the classification of granular cells (granulocytes, leukocytes), nongranular cells (lymphoid cells) and mast cells.

Semon-Rosenbach's Law in Paralysis of Larynx.—Leiri says that the condition expressed in this law, that in progressive organic disease affecting the recurrent laryngeal nerve the posterior crico-arytenoid muscles are paralyzed before the other laryngeal muscles, is due to the fact that the afferent neurons as a rule have less power of resistance against pathologic processes than do the efferent neurons.

Microscopic Investigations Regarding Gastric Mucous Membrane in Aplastic Anemia.—In three of his four cases of aplastic anemia, Wallgren could not definitely determine whether the gastric mucous membrane was normal or the seat of a mild inflammation; in the fourth case there was gastritis without glandular atrophy. Pronounced gastritis with atrophy of the glands was seen in fourteen cases of progressive pernicious anemia previously examined by him. The absence in aplastic anemia of the pathologically changed gastric mucous membrane of pernicious anemia is regarded as evidence that the two conditions are of unlike nature.

Norsk Magasin for Lægevidenskapen, Oslo

90: 713-812 (July) 1929

*Painful Relaxation of Pelvic Joints in Pregnancy. K. Skajaa.—p. 713.
*Condition of Endocrine Organs in Rickets and Spasmophilia. L. Stoltenberg.—p. 729.
*Development of Cancer in Chronic Gastric and Duodenal Ulcers. C. R. Bull.—p. 745.
*Investigations on Tuberculin Reactions. H. J. Ustvedt.—p. 760.
Tuberculous Neo-Infiltration and Miliary Tuberculosis. H. Hatlehol.—p. 769.
*Effect of Physical Exertion on Blood Sugar Level. C. Bruusgaard.—p. 778.

Painful Relaxation of Pelvic Joints in Pregnancy.—Painful relaxation of the symphysis and the sacro-iliac joints was present in thirty-one of 185 patients examined by Skajaa in the last months of pregnancy. Roentgenograms of the symphysis in thirty-five patients without, and in nineteen with painful relaxation of the joints, made with the film placed in the vagina just below the symphysis, showed the width of the symphysis to be from 4 to 9 mm. In the second group cavity formation in the cartilage was far more common and in some cases areas of decalcification were seen in the pubic bones.

Condition of Endocrine Organs in Rickets and Spasmophilia.—In rabbits with rickets and spasmophilia, Stoltenberg did not find morphologic changes in the suprarenals or thymus of etiologic or pathogenic significance. In the thyroid and parathyroids, hyperplasia and hypertrophy were noted and interpreted as signs of increased internal secretion. While no etiologic or pathogenic responsibility in the usual sense is ascribed to these organs, the rachitic and spasmophilic picture is influenced by their reactions.

Development of Cancer in Chronic Gastric and Duodenal Ulcers.—Bull concludes that the likelihood of cancer in patients with gastric and duodenal ulcers is very slight. He estimates the frequency to be between 1 and 2 per cent.

Investigations on Tuberculin Reactions.—In parallel tests of Pirquet's and Mantoux's reactions, Ustvedt found that Mantoux's reaction with doses of 0.001 and 0.01 mg. is valueless in comparison with Pirquet's reaction, and at 0.1 mg. gives about the same result as Pirquet's reaction, or possibly a result slightly inferior. Pirquet's test is therefore regarded as the method of choice. There seems to be no appreciable difference in the reactions of tuberculous and nontuberculous persons to the smaller doses of tuberculin in Mantoux's test.

Effect of Physical Exertion on Blood Sugar Level.—Bruusgaard found in athletes, after violent exercise lasting thirty-five or forty minutes, a constant and considerable increase in the blood sugar value (greater than previously reported). It is less pronounced in the training period than in contests. In exertion lasting three hours a definite and practically constant fall in the blood sugar value was noted, most pronounced in the fasting participants. In prolonged effort hypoglycemia may be regarded as a factor in fatigue. Since the diabetic organism reacts similarly to the normal organism, but with greater variations as to both hyperglycemia and hypoglycemia, the effect of physical exertion on the blood sugar level should be borne in mind in the treatment of diabetic patients.

Svenska Läkaresällskapets Handlingar, Stockholm

55: 1-48, 1929

Asepsis and Antisepsis in Our Time. G. Nyström.—p. 1.
*Epidemiology of Acute Anterior Poliomyelitis. C. Kling.—p. 23.

Research on Epidemiology of Acute Anterior Poliomyelitis.—Kling made a comparative study of epidemics of acute anterior poliomyelitis in Sweden, Saxony and Roumania. From his observations as to the topography of the epidemics, he concludes that water plays a rôle of primary importance in the transmission of acute anterior poliomyelitis. Thirteen maps accompany the article.

Ugeskrift for Læger, Copenhagen

91: 559-580 (July 4) 1929

Obesity: Significance in Practice. K. Secher.—p. 559.
*Treatment of Acne Vulgaris with Small Doses of Quartz Lamp Radiation. A. Korsbjerg.—p. 568.

Treatment of Acne Vulgaris with Small Doses of Quartz Lamp Radiation.—Korsbjerg asserts that this treatment of common acne seems superior to methods of treatment previously employed, as to both efficacy and ease of application.

91: 581-602 (July 11) 1929

*Actinomycosis: Diagnosis and Treatment. T. Eiken.—p. 581.
Length of Incubation Period in Bacillus Paratyphosus B Infections. E. Sylvest.—p. 593.

Actinomycosis, with Special Regard to Diagnosis and Treatment.—Of the twenty-two cases reported by Eiken, eighteen were cervicofacial; in two the tongue was affected; in one case a fatal thoracopulmonary actinomycosis developed from actinomycosis of the throat, and one, developing from actinomycotic appendicitis, represented the abdominal form. In half the cases the onset was acute or subacute. He says that the diagnosis can be made with certainty only by the demonstration of actinomyces mycelium. He calls special attention to fragmentation. The treatment consisted of roentgen irradiation, the administration of potassium iodide and surgical intervention. Twelve patients, including the one with abdominal actinomycosis, are believed definitely cured, after observation for from one to several years; five with apparent recovery have not yet been observed for a full year; four, still under treatment, are noticeably improved. A roentgen irradiation of a scant half Holzknecht erythema dose (5 mm. of aluminum) given about six times during the course of nine months is recommended. In cervicofacial actinomycosis the prognosis is considered good, in the abdominal form, grave, and in actinomycosis of the lungs, very grave. Recovery may, however, occur in apparently hopeless cases.

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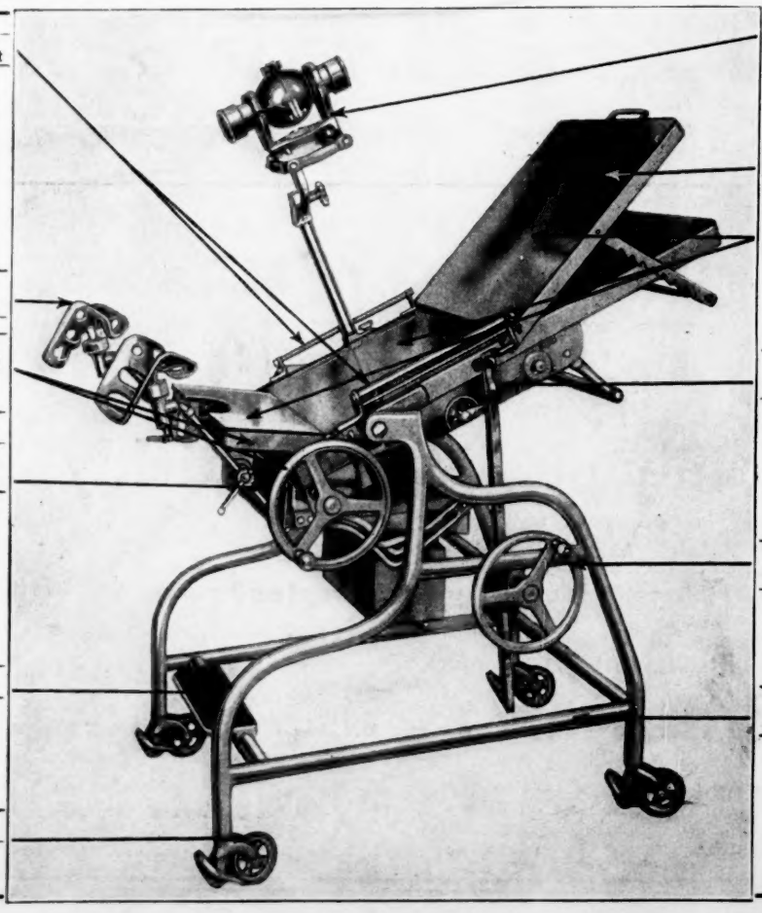

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